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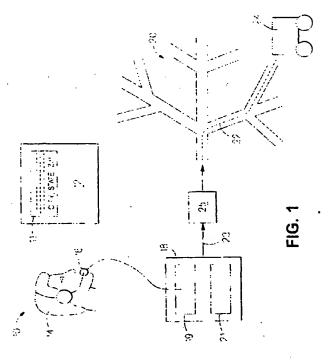
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# (54) Speech recognition

(57) A method of speech recognition includes recognizing a first utterance, recognizing a second utterance having information that is related to the first utterance, and determining the most probable first and second utterances based on stored information about valid relationships between possible first and second utter-

ances. The recognized first utterance may be recognized continuously and the recognized second utterance may be recognized discretely. The determination of the most probable utterances may include creating a list of possible utterances that could be confused with a recognized utterance and rerecognition of a list of possible utterances against an utterance



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## Description

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The invention relates to speech recognition.

A speech recognition system attempts to determine, either on a continuous or discrete basis, what words were intended, based on analysis of a speaker's utterances. A variety of techniques have been used to improve the accuracy of the recognition.

In one aspect, the invention features a method of speech recognition including recognizing a first utterance, recognizing a second utterance having information that is related to the first utterance, and determining the most probable first and second utterances based on stored information about valid relationships between possible first and second utterances.

The method may further include determining the validity of a recognized utterance and including an invalid utterance in a list of possible utterances for comparison with the possible utterances in the list.

In some embodiments of the invention, the determination of the most probable utterances may include rerecognition of a list of possible utterances against at least one utterance.

Implementations of the method may further include the following features: ranking the list of possible utterances based upon how closely each possible utterance corresponds to the at least one utterance: creating an hypothesized list of possible utterances that relate to the at least one recognized utterance based on the stored information: comparing the ranked list of possible utterances to the hypothesized list of possible utterances for commonality between the lists: creating an hypothesized list of possible utterances that relate to the at least one recognized utterance based on the stored information: creating a list of possible utterances that could be confused with the at least one recognized utterance.

In some embodiments of the invention, the recognized first utterance is recognized continuously and the recognized second utterance is recognized discretely.

Implementations of this aspect of the method may further include the following features. A list is created of possible first utterances that may be confused with the recognized first utterance. An hypothesized list of possible second utterances is created that relate to the possible first utterances based on the stored information. The recognized second utterance is added to the hypothesized list of possible second utterances to create a merged list of possible second utterances. The merged list of possible second utterances is rerecognized against the second utterance to get a ranked list of possible second utterances, the ranking based upon how closely each possible second utterance in the merged list corresponds to the second utterance. The ranked list of possible second utterances is compared to the hypothesized list of possible second utterances for commonality between the lists, the highest ranked possible second utterance in the ranked list being compared first. An hypothesized list of possible first utterances is created from the second recognized utterance based on the stored information. The recognized first utterance is added to the hypothesized list of possible first utterances to create a merged list of possible first utterances. The merged list of possible first utterances is rerecognized against the first utterance to get a ranked list of possible first utterances having a ranking based upon how closely each possible first utterance in the merged list corresponds to the first utterance. A possible first utterance ranked second in the ranked list of possible first utterances is evaluated by determining whether a distance parameter associated with the second ranked possible first utterance is within an acceptable limit. A user is advised when the second ranked possible first utterance is not within the acceptable limit and no commonality exists between the ranked list of possible second utterances and the hypothesized list of possible second utterances.

In some embodiments of the invention, the first utterance is a zipstate and the second utterance is a city from a destination address on a package, the determination of the most probable first and second utterances resulting in the sorting of the package according to the packages destination address.

In some embodiments of the invention, the first utterance is a spelled prefix including ordered symbols and the second utterance is a word. A list is created of possible prefixes that could be confused with the recognized prefix. Creating the list of possible prefixes includes determining, in the context of a preceding symbol or silence, a probability of confusing each recognized symbol in the prefix with each symbol in a list of possible symbols, of confusing each recognized symbol in the prefix with an addition of an extra symbol preceding the recognized symbol, and of confusing each recognized symbol in the prefix with the absence of a symbol. Creating the list of possible prefixes includes replacing a sequence of symbols with a single symbol.

In some embodiments of the invention, the first utterance is a spelled word and the second utterance is a word, the determination of the most probable first and second utterances resulting in recognizing the spelled word.

In another aspect, the invention features a method of generating a choice list from a continuously recognized utterance including continuously recognizing a spoken utterance, consulting stored information to determine the probability of confusing possible utterances in the stored information with the recognized utterance, and producing a list of possible utterances from the stored information that could be confused with the recognized utterance.

The method may include rerecognizing the utterance against a merged list of the list of possible utterances and the recognized utterance to create a ranked list of possible utterances having a ranking based upon how closely each

utterance in the merged list corresponds to the spoken utterance.

In another aspect, the invention features a method of recognizing ambiguous inputs including recognizing a first ambiguous input, recognizing a second ambiguous input having information that is related to the first ambiguous input, and determining the most probable first and second ambiguous inputs based on stored information about valid relationships between possible first and second ambiguous inputs.

In another aspect, the invention features a method of training a speech recognizer including prompting a user to make a first utterance including symbols, recognizing the symbols, and calculating the probability of confusing each recognized symbol with the prompted symbol. The probabilities are calculated within the context of the preceding symbol or silence.

In another aspect, the invention features a method of displaying word choices during speech recognition including recognizing an uttered word, recognizing a spelling of a prefix of the word, whereby symbols are used to spell the prefix, and displaying a list of word choices on a screen for selection, a top choice on the list corresponding to a highest ranked choice. The symbols are letters, digits, and punctuation.

Advantages of the invention may include one or more of the following. Recognition accuracy is improved considerably over prior speech recognition systems. Any two utterances containing related data can be recognized with improved accuracy. The invention can hypothesize a list of choices from a continuously recognized utterance. The invention can determine if an utterance contains invalid data. The invention can improve the ability of a recognizer to determine a word that has been spelled even though the individual letters ("b" versus "e") may be difficult to distinguish.

Other advantages and features will become apparent from the following description and from the claims.

## Description

Figure 1 is a schematic diagram of a package sorting system.

Figure 2 is a functional block diagram of a city, state and zip code determining system.

Figure 3 is a functional block diagram of a confusability algorithm.

Figures 4-4b are flow diagrams showing an implementation of the address determining system.

Figure 5 is a confusability matrix of probabilities.

Figure 6 is an example of calculated confusion values.

Figure 7 is a listing of zip codes and their related confusion values.

Figure 8 is a functional block diagram of a system for determining a word from the spelling of the word.

Figure 9 is a functional block diagram of a recognition system.

Figure 10 is a functional block diagram of a system for determining a word from the spelling of the word. Figure 11 is a functional block diagram of a confusability algorithm.

Figures 12-12b are flow diagrams showing an implementation of the word determining system.

Figures 13-13b are confusability matrices of probabilities.

Figure 14 is an example of calculated confusion values.

Figure 15 is a listing of words and their related confusion values.

Figures 16-16a are forward and backward diagrams representing Baum Welsh training.

Figure 17 is a diagrammatic representation of a user interface.

As seen in Fig. 1, in system 10 for sorting parcels 12, user 14 reads the address 11 on each parcel 12 and a microphone 16 conveys the spoken information to a computer 18. A speech recognizer 19, such as Voice Tools™ or Dragon Dictate™, available from Dragon Systems. Inc., is supplemented with an associated hypothesis algorithm 21 that determines the spoken address based on the output of the recognizer and notifies the user whether the address is valid. To find that an address is valid, in most instances system 10 must be able to determine the existence of a valid city, state and zip code combination (e.g., Somerville, MA 02143) from the speech recognized address: for states with one shipping destination for all cities only a valid state and zip code is required (e.g., Montana 59100).

For a valid address, the zip code information 23 is sent to a second computer 25 which routes the package along a "tree" of sorting conveyors 20. e.g., by tracking the package using electric eyes or machine readable labels. Package 12 is transported along a predetermined path 22 on conveyors 20 leading to a truck 24 going to the package's destination.

For an invalid address, the user may repeat the address or reject the package as having an invalid address.

Referring to Fig. 2. the first step in the sorting process is that the microphone receives the utterances of the "zip-state" 30 and "city" 32 on the package. The zipstate is the zip code and state spoken as one word, e.g., "02143Massachusetts". Using continuous speech recognition, zipstate recognizer 34 determines the zipstate 38 it believes corresponds to the spoken zip code and state. Each number of the zip code is recognized against a vocabulary of numbers zero through nine and the state is recognized against a vocabulary of states. If the recognizer is not able to recognize five digits and a state, the address is rejected as invalid and an invalid address signal 35 is sent to a sound generator 36 in the headphones which produces a beep 37 signaling the user that the address is invalid.

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If the recognizer is able to recognize five digits and a state, a confusability algorithm 39 (described below) is run to create a list of all hypothesized cities 40 that correspond to the recognized zipstate 38 and to other zipstates that the recognizer would be likely to confuse with the recognized zipstate (these other zipstates are limited to valid zip codes within the recognized state). To this list of hypothesized cities 40 is added a list of cities 42 determined by a discrete city recognizer 41. The uttered city 32 is recognized against a vocabulary of valid cities 43 that correspond to the recognized state to produce the list 42 of possible cities.

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The list of hypothesized cities 40 and the list of cities 42 are merged 44 to create a city list 45. City list 45 is then used as a city vocabulary against which the city utterance is rerecognized 46 and a ranked list of cities 47 is generated based on a determination by the recognizer of how closely it believes each city in the merged city list 45 matches the uttered city 32. The top city in the ranked list of cities 47, i.e., the best recognized city, is then compared 48 to the hypothesized cities 40. If the top city is in the hypothesized city list, that city is deemed the correct destination, and the package is routed to that city. If not, the next city in the ranked list is compared to the hypothesized city, and so on: the first match determines the destination city 49 which is delivered to the second computer 25.

If no commonality exits between the ranked list of cities 47 and the hypothesized cities 40, zipstates 51 are hypothesized 50 from the ranked list of cities 47 by consulting a database 52 of zip codes and cities. The originally recognized zipstate 38 is merged 53 with the hypothesized zipstates 51 and the resulting zipstate list 54 is used as a zipstate vocabulary against which the zipstate utterance 30 is discretely rerecognized 55 to generate a ranked list of zipstates 56 including a distance parameter associated with each zipstate signifying how poorly each zipstate was recognized as compared to the highest ranked zipstate. The highest ranked zipstate will, naturally, be the originally recognized zipstate 38. Since it is already known that no hypothesized city from the original zipstate 38 corresponds to a recognized city (if it had, the city would have be in both the ranked list of cities 47 and the hypothesized cities 40 and this step in the algorithm would not have been reached), it is the second zipstate on the ranked list that is evaluated 57. The top ranked zipstate is maintained in ranked list 56 for comparison with the other zipstates in the list to determine the distance parameter. If the distance parameter for the second zipstate is beyond an acceptable limit, e.g., if 8log<sub>2</sub>confusion value (described below) of the second zipstate is more than 100 off that of the first zipstate, the package is rejected as having an invalid address and an invalid address signal is sent to the user. If the distance parameter is within the acceptable limit, the package is deemed to have a valid address and the information if delivered to second computer 25 for controlling shipment.

As seen in Fig. 3. in the confusability algorithm 39, the first step is for a zip code hypothesizer 58 to hypothesize possible valid zip codes 59 for the recognized state of zipstate 38 by consulting a database 60 of zip codes and states. The probability that the recognizer would confuse the recognized zip code with each of the hypothesized valid zip codes 59 is determined 61. The top forty zip codes, i.e., those with the highest probabilities of being confused with the recognized zip code, form a list of zipstates 62 that are then rerecognized 63 against the uttered zipstate 30 in a discrete recognition creating a ranked list 64 of the top ten zipstates. It is from this ranked list 64 of zipstates that the list of hypothesized cities 40 is created by a city hypothesizer 65 which consults a database 66 of zip codes and corresponding cities

The discrete recognition against the list of zipstates 62 has a higher recognition accuracy rate than the original continuous recognition of the uttered zipstate. Discrete recognition of the original uttered zipstate is not done because it would require recognition against a vocabulary of 5X10<sup>6</sup> zipstates.

An overview of the code is shown in Figs. 4-4b. The user utters the zipstate and city 70. The zipstate is continuously recognized and if the recognized zipstate 38 does not contain good data, i.e., five digits and a state, it is rejected as a bad address 72 and the user is informed that the address was rejected.

If the recognized zipstate contains good data 74, the confusability algorithm 39 is employed to create zipstate list 62. Referring to Figs. 4a and 4b, a propagation subroutine 78 is entered to hypothesize the zip codes which are to populate zipstate list 62.

As seen in Fig. 4b, in the propagation routine 78, a variable n corresponding to the digit place in the zip code (first, second, third, fourth, or fifth number of the zip code) is incremented 81 each time the propagate routine is entered at arrow 80. An index number i corresponding to the numbers zero through nine is incremented 82 after each loop 83 of the propagation routine. At the start of each loop 84, the index number is put into the nth digit place. The built code is checked for validity 85 against the database of valid zip codes for the recognized state. If the index number in the nth digit place is not valid, the index number is incremented and the next number is tried. If the index number in the nth digit place is valid, a confusion value 88 corresponding to how likely it would be for the recognizer to confuse the number it recognized in the nth digit place with the index number in that digit place is calculated (described further below). The code is placed in a cue 90 and the loop is repeated incrementing the index number each time until i=9 has been checked 91 for the nth digit place. The codes are placed in queue 90 in descending order of probability.

When i=9, the propagation routine is exited. In Fig. 4a, if there are less than forty zip codes 93 in a top list 92, the highest probability code 94 in queue 90 is considered. If code 94 has less than five digits 95, the propagation routine is reentered with this code. Variable n is incremented and the process is repeated until there are 5 digits in the highest

probability code. This zip code is then moved to the top list 92. The next highest probability code 94 is then taken from queue 90 for consideration. If there are five digits in this zip code, the zip code is moved to the top list. This is repeated until the code at the top of queue 90 has less than five digits. This partial zip code is then propagated. The confusability algorithm is repeated until there are forty zip codes in top list 92.

Referring again to Fig. 4. the list of zipstates 62 corresponds to the forty zip codes from top list 92 combined with the recognized state. The zipstates 62 are then rerecognized by a discrete recognition 95' against the original utterance. The recognizer returns a distance parameter of how well the zipstates were recognized 96. Beyond a limit the zipstates are rejected. At most the top ten recognized zipstates form the ranked list of zipstates 64. A database of cities corresponding to zip codes is then consulted to create the list of hypothesized cities 40.

At this point in the code (though the following check could be done at any time after recognizing the original zipstate utterance) the recognized zip code is checked against the recognized state. If the recognized zip code is a valid zip code for the recognized state 97, and if there is only one shipping destination for the recognized state 98, the package is shipped to the recognized state. If either the recognized zip code is not valid for the recognized state or there is more than one shipping destination for the recognized state, the city is recognized 41 by discrete recognition forming the list of cities 42. From the list of cities 42 and the hypothesized cities 40, the ranked list of cities 47 is created as described above with reference to Fig. 2. The algorithm proceeds as described above.

Referring to Fig. 5, the confusion value corresponding to how likely it would be for the recognizer to confuse the recognized number in the nth digit place with the index number in the nth digit place is calculated from a confusability matrix of probabilities. The rows of the matrix correspond to the recognized number and the columns of the matrix correspond to the index number. For example, the probability of confusing the recognized number 4 with the index number 2 is 0.0216. As the number of digit places increases, the probability is calculated by multiplying the probabilities for each digit place. For example, the probability of confusing the recognized number 44 with 22 is 0.0216 x 0.0216 = .00047; the probability of confusing 442 with 223 is .00047 x .1888.

The confusability matrix is experimentally determined by having predetermined numbers read off to the speech recognizer and calculating how often the number is incorrectly recognized and what number it is incorrectly recognized as. The confusability matrix may be customized for an individual user. The confusability matrix is shown in Fig. 5 as a matrix of probabilities for ease of description: the code utilizes a matrix of natural logs of the probability.

## **EXAMPLE**

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Utterance: 02143Massachusetts Somerville Zipstate recognized: 03112MA

Confusability algorithm:

Referring to Fig. 6 in which the calculation of the confusion values is shown for each digit place, in the first digit place, n=1, 0 is the only valid number for Massachusetts zip codes. Queue 90 becomes:

n	i	zip code	confusion value
1	0	0	1

There are fewer than 40 zip codes in top list 92: 0---- is pulled from queue 90 as the highest probability code in the queue; there are less than five digits in the pulled code; the propagation routine is reentered.

In the second digit place, n=2, 1 and 2 are the only valid digits. Queue 90 becomes:

n	i	zip code	confusion value
2	2	02	0.0497
2	1	01	0.0001

02--- is pulled from queue 90 as the highest probability code and the propagation routine is reentered. In the third digit place, n=3, 0 to 7 are valid digits. Queue 90 becomes:

n	i	zip code	confusion value
3	1	021	0.04970
3	4	024	0.00456
3	5	025	0.00365

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## (continued)

n	i	zip code	confusion value
3	7	027	0.00209
3	0	020	0.00077
2	1	01	0.00010

For i= 2, 3 and 6 the confusion value is 0.0497 \* 0.0001, which is so low that these codes get dropped from the queue.

021-- is pulled from queue 90 as the highest probability code and the propagation routine is reentered. In the forth digit place, n=4, 0 to 9 are valid digits. Queue 90 becomes:

n	i	zip code	confusion value
4	1	0211-	0.04970
4 ·	4	0214-	0.00456
3	- 4	024	0.00456
4	5	0215-	0.00365
3	5	025	0.00365
4	7	0217-	0.00209
3	7	027	0.00209
4	9	0219-	0.00150
4	0	0210-	0.00077
3	0	020	0.00077
2	1	01	0.00010

0211- is pulled from queue 90 as the highest probability code and the propagation routine is reentered. In the fifth digit place, n=5, 0 to 9 are valid digits. Queue 90 becomes:

n	i	zip code	confusion value
5	2	02112	0.04970
5	3	02113	0.00940
5	6	02116	0.00600
4	4	0214-	0.00456
3	4	024	0.00456
5	0	02110	0.00365
4	5	0215-	0.00365
3	5	025	0.00365
5	7	02117	0.00260
5	8	02118	0.00209
4	7	0217-	0.00209
3	7	027	0.00209
5	4	02114	0.00200
5	9	02119	0.00150
4	9	0219-	0.00150
5	5	02115	0.00140
5	1	02111	0.00100
4	0	0210-	0.00077
3	0	020	0.00077
2	1	01	0.00010

There are fewer than 40 zip codes in top list 92: 02112 is pulled from queue 90 as the highest probability code: 02112 has five digits so it is moved to top list 92: 02113 is pulled from queue 90 and moved to the top list: 02116 is

pulled from queue 90 and moved to the top list: 0214- is pulled from queue 90 and propagated. Again, in the fifth digit place, n=5. 0 to 9 are valid digits. Queue 90 becomes:

5	<u>n</u>	i	zip code	confusion	value
	5	2	02142	0.00456	
	3	4	024	0.00456	
	5	0	02110	0.00365	
10	4	5	0215-	0.00365	
	3	5	025	0.00365	•
	5	7	02117	0.00260	
	5	8	02118	0.00209	
	4	7	0217-	0.00209	
15	3	7	027	0.00209	
	5	4	02114	0.00200	
	5 5	9	02119	0.00150	
	4	9	0219	0.00150	
	5	5	02115	0.00140	
20					
		5	1	02111	0.00100
		5	3	02143	0.00086
25		4	0	0210-	0.00077
,		3	0	020	0.00077
		5 5	<b>6</b> .	02146	0.00055
			0	02140	0.00033
		5	7	02147	0.00020
30		5	8	02148	0.00019
		5	4	02144	0.00018
		5	9	02149	0.00014
		5 2	5	02145	0.00013
		2	1	01	0.00010

02142 is moved to the top list and 024-- is pulled from queue 90 and propagated. The process is continued until there are forty zip codes in top list 92. The top 30 zip codes are shown in Fig. 7.

Discrete recognition of the top forty zipstates yields four zipstates in ranked order, corresponding cities 40 are hypothesized:

zipstates	hypothesized cities 40	
02143MA	Somerville	
02147MA	Brookline Village	
02112MA	Essex Station	
02113MA	Hanover	

Cities 42 are discretely recognized from the utterance:

50 Sagamore Somerville Sudbury Salisbury Sheldonville

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City list 44 is formed:

Somerville
Brookline Village
Essex Station
Hanover
Sudbury
Sagamore
Salisbury
Sheldonville

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10 Ranked city list 47 is formed from discrete rerecognition of the city:

Sagamore Somerville Sudbury Salisbury Sheldonville

Comparison of hypothesized cities 40 to ranked list 47 shows Somerville as the common city. The package is shipped to Somerville.

Factory tests of the invention for sorting packages have resulted in a package rejection rate for invalid address of about 2% and a misshipping rate of about 0.1%; whereas, factory tests of the invention without employing the confusability algorithm, i.e., hypothesizing cities only from the one recognized zipstate, resulted in a package rejection rate of about 5-8% and a misshipping rate of about 0.1%.

Referring to Fig. 8. a similar hypothesis algorithm can be used to recognize spoken letters when spelling a word. The word 100 is first uttered and recognized 101 by discrete recognition. If the recognizer gets the word wrong, the user so indicates to the recognizer and then utters the spelling of the word 102. The spoken string of letters is recognized 104 by continuous recognition. The confusability algorithm 106 uses the probability that a recognized letter 105 would be confused with a letter of the alphabet. As in the zip code example, a ranked list of letter combinations 107 is formed (similar to ranked zipstate list 64). In creating the ranked list of letter combinations, a dictionary database 108 is consulted to validate that each letter combination is capable of forming a valid word (similar to checking for valid zip codes). The top forty valid letter combinations are then discretely rerecognized against the spoken string of letters to form ranked list 107. A list of words 110 is then hypothesized from the ranked list of letter combinations (similar to hypothesized cities 40).

The hypothesized words 110 and a list of words 111 formed by discrete recognition of the uttered word 100 are merged 112 to form a word list 113. Word list 113 is discretely rerecognized 114 against the spoken word and a ranked list of words 115 is formed. Ranked list of words 115 is compared 116 to hypothesized words 110, the top ranked word being compared first. The first ranked word that shows up in the hypothesized words 110 is chosen 117.

If the chosen word is incorrect the user can reject it and the next ranked word that shows up in the hypothesized words 110 is chosen. This process can be continued until the correct word is chosen or the ranked list is exhausted. Alternatively, word comparer 116 can create a choice list 117' containing all words in common between ranked list of words 115 and hypothesized words 110 can be displayed to the user. If the correct word is contained within the choice list, the user can select the word either using the keyboard or with a spoken command. For example, if the misrecognized uttered word 100 is "in", a choice list may appear as:

in:

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imp

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and

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with the first ranked word appearing above the list and within the list. If the user then continues speaking without choosing from the choice list, the first ranked word is automatically chosen.

If the ranked list is exhausted without finding a common word or the correct word, possible spellings 119 are hypothesized 118 from the ranked list of words 115. The recognized spelling 104 is merged 120 with the hypothesized spellings 119 and the resulting spelling list 121 is discretely rerecognized 122 against the original spelling utterance 102 to form a ranked list of spellings 123. The second spelling on the ranked list is evaluated 124. If the distance

parameter returned by the recognizer is beyond the acceptable limit, the spelling is rejected, if it is within the acceptable limit, that word is chosen. If the user rejects the spelling, the next spelling on the list can be considered. Alternatively, as described above, a choice list 123' containing all but the first ranked spelling in the ranked list of spellings 123 can be displayed to the user for selection.

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Referring to Fig. 10, a particular embodiment of a hypothesis algorithm for recognizing spelled word prefixes is shown. Symbols which may be included in the prefix are generally letters, numbers, and punctuation (e.g., hyphen, period, comma, brackets). The word 232 is first uttered and recognized 241 by discrete recognition. If word 232 is incorrectly recognized, the user utters the spelling of the prefix of the word 230 (generally 3 to 5 symbols, the prefix may be part or all of the word). The spelled prefix is recognized 234 by continuous recognition. The confusability algorithm 239 uses the probability that the symbols in recognized prefix 238 would be confused with other symbols to hypothesize a ranked list of prefixes 264. A distance parameter associated with each prefix signifies how poorly each prefix was recognized as compared to the highest ranked prefix. A top ranked prefix 242 determined by discrete recognition of the uttered word 232 is merged 244 with prefix list 264 to form merged prefix list 245. Word hypothesizer 265 hypothesizes a word list 240 by consulting a database of prefixes and corresponding words 266.

Word list 240 is discretely rerecognized 246 against the uttered word 232 to form a ranked list of words 247 including a distance parameter associated with each word signifying how poorly each word was recognized as compared to the highest ranked word. The distance parameters associated with prefixes 264 are then added 248 to the distance parameters of words 247 that include corresponding prefixes and ranked list 247 is reranked 249 according to the new distance parameters. This aids in the recognition of homophones because it gives a higher ranking to the homophone having a higher ranked spelled prefix. Reranked word list 249 is displayed to the user as a choice list. If the correct word is contained within the choice list, the user can select the word either using the keyboard or with a spoken command.

As seen in Fig. 11, in the confusability algorithm 239, a prefix hypothesizer 258 hypothesizes a list of prefixes 262 based on the probability that recognizer 234 would confuse recognized prefix 238 with other word prefixes. A database 260 of valid prefixes or words is used as a filter to form a list of valid prefixes 262. Database 260 can be. e.g., a list of valid prefixes, a dictionary, or an n-letter language model. The top one-hundred and fifty prefixes, i.e., those with the highest probabilities of being confused with the recognized prefix 238, form the list of prefixes 262. The list of prefixes 262 are then rerecognized 263 against the uttered prefix 230 in a discrete recognition which filters out poorly confused prefixes and creates a ranked list 264 of the top fifteen to twenty prefixes. It is this ranked list 264 of prefixes that is merged with the top ranked prefix from the discrete recognition of the uttered word to form the merged prefix list 245 from which the list of hypothesized words 240 is created.

An overview of the code is shown in Figs. 12-12b. The user utters a word and if the recognizer misrecognizes the word, the user then utters the prefix 270. The confusability algorithm 239 is then employed to create prefix list 262. Referring to Figs. 12a and 12b, a propagation subroutine 278 is entered to hypothesize the prefixes which are to populate prefix list 262.

As seen in Fig. 12b, in the propagation routine 278, a variable n corresponding to the digit place in the prefix (first, second, third, forth, or fifth place in a prefix having five symbols) is incremented 281 each time the propagate routine is entered at arrow 280 (unless the prior propagation was an insertion 380, as described below, in which case n is not incremented 381). Alternatively, variable n can be incrementing at the end of each permutation loop and deletion and kept constant at the end of each insertion loop. Propagation routine 278 includes three sub-routines, a permutation routine 378, an insertion routine 478 and a deletion routine 578. An index value i (i = 0 to the number of symbols, i= 0 to 35 in the example that follows) corresponding to the symbols letters a through z, digits zero through nine, and punctuation, in that order, is incremented 382, 482 after each loop 383, 483 of the sub-routines. As described more fully below, confusability is determined in the context of the preceding symbol in the prefix.

At the start 384 of permutation routine 378, the index value i is put into the nth digit place and checked for validity 385 against the database of valid prefixes 260. If the index value in the nth digit place is not valid, the index value is incremented and the next value is tried. If the index value in the nth digit place is valid, a confusion value 388 corresponding to how likely it would be for the recognizer to confuse the value it recognized in the nth digit place with the index value in that digit place is calculated (described further below). The prefix is placed in a queue 390 and the loop is repeated incrementing the index value each time until i=38 has been checked 391 for the nth digit place. The codes are placed in queue 390 in descending order of probability.

When i=38 in permutation routine 378, if the last loop of propagation routine 278 entered for this build was not a deletion loop 480, insertion routine 478 is entered 484, i is set to zero and put into the nth digit place (insertion loops do not follow deletion loops and deletion loops do not follow insertion loops because to do so would cancel out their effect). The built prefix is checked for block permutation 486 and for validity 485. If the index value in the nth digit place is valid, a confusion value 488 is calculated and the prefix is placed in queue 390. Loop 483 is repeated incrementing the index value each time until i=38 has been checked 491 for the nth digit place.

When i=38 in insertion routine 478, if the last loop of propagation routine 278 entered for this build was not an

insertion loop 580. deletion routine 578 is entered 584. A confusion value 588 corresponding to how likely it would be for the recognizer to confuse the value it recognized in the nth digit place with the absence of a symbol in the nth digit place is calculated. The prefix is placed in queue 390.

At the end of the propagation routine, the prefix that the propagation routine is entered with (described more fully below) is checked for inclusion of a block permutation 686. A block permutation occurs if the built prefix includes LU, LE, MU or ME. The letter W is substituted for these letter combinations and checked for validity 685 against the database of valid prefixes 260. If it is a valid prefix it is placed in queue 390.

Propagation routine 278 is then exited. Referring to Fig. 12a. the highest probability prefix 294 in queue 390 is considered. If the value of n from the prior propagation of prefix 294 is less than the number of symbols in recognized prefix 238, the propagation routine is reentered with this prefix. If the last build for this prefix was not an insertion, variable n is incremented and the propagation routine reentered. If the last build for this prefix was an insertion, the propagation routine is reentered without incremented variable n. The process is repeated until the value of n of the highest probability prefix in queue 390 is equal to the number of symbols in recognized prefix 238. This prefix is then moved to the top list 292. The next highest probability prefix 294 is then taken from queue 390 for consideration. The confusability algorithm is repeated until queue 390 is exhausted or there are one-hundred and fifty prefixes 293 in top list 292.

Referring again to Fig. 12, the list of prefixes 262 corresponds to the one-hundred and fifty prefixes from top list 292. The prefixes 262 are then rerecognized by a discrete recognition 295 against the original prefix utterance 230. The recognizer returns a distance parameter with each prefix related to how well the prefixes were recognized. At most the top fifteen to twenty recognized prefixes form the ranked list of prefixes 264. The top prefix 242 from discrete recognition 241 of uttered word 232 is combined with prefix list 264. A database of words corresponding to prefixes is then consulted to create the list of hypothesized words 240. The ranked list of words 247 is created as described above with reference to Fig. 10. The algorithm proceeds as described above.

Referring to Figs. 13-13b, a few examples of confusability matrixes are shown. Figure 13 includes confusion values for permutations. Fig. 13a includes confusion values for insertions, and Fig. 13b includes confusion values for deletions. The confusability matrices are shown as matrices of probabilities for ease of description; the code utilizes matrices of natural logs of the probability. The symbols hyphen, period and comma are not shown.

The confusion value corresponding to how likely it would be for the recognizer to confuse the recognized symbol in the nth digit place with the index value in the nth digit place is determined in the context of the symbol in the preceding nth digit place (silence if n=1). The rows of the matrix correspond to the symbol context, the columns of the matrix correspond to the index value, and the header symbol 510 corresponds to the recognized symbol. There are 39 such matrixes, one for each symbol, for permutation, insertion and deletion for a total of 117 matrixes or 39 three dimensional matrixes.

For example, in the case of a permutation, the probability of confusing the recognized letter B with the index value D in the context of silence is 0.011988 and the probability of confusing the recognized letter B with the index value e in the context of a is 0.017751. The probability of confusing the recognized letter O with the index value 4 in the context of t is 0.000258. As the number of digit places increases, the probability is calculated by multiplying the probabilities for each digit place. For example, the probability of confusing the recognized prefix BO with TA is 0.001323 x 0.001831 = 0.000002422. The confusability matrices are experimentally determined as described below.

## **EXAMPLE**

Uttered word: Dosage List of recognized word:

Postage. Post, Postal, Buffalo, Dosing

Spelled prefix: DOS Prefix recognized: BOS Confusability algorithm:

Referring to Fig. 14 in which the calculation of the confusion values is shown for each digit place (only those symbols having confusion values greater than 0.01 are shown for simplicity, generally the cut-off value is 0.000010). In the first digit place, n=1, in the context of silence, the valid prefixes are put in queue 390:

n	operation	prefix	confusion value
1	Р	В	0.655987
1	0	ŀ	0.072822

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## (continued)

n	operation	prefix	confusion value			
1	Р	D	0.011988			
1	Р	Ε	0.011813			
1 i		Ε	0.010596			
(P:	(P = permutation. D = deletion. I = insertion)					

PB is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was not an insertion so n is incremented: the propagation routine is reentered. Queue 390 becomes:

n	operation	prefix	confusion value
2	P	ВО	0.405482
2	D	В	0.095995
1	D		0.072822
2	I	88	0.055001
2	Ι,	во	0.050121
2	Р	BB	0.015694
1	P	D	0.011988
1	Р	E	0.011813
1	1	E	0.010596
2	Р	BW	0.010545

PBO is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was not an insertion so n is incremented: the propagation routine is reentered. Queue 390 becomes (only those possible prefixes having confusion values greater than 0.002 are shown for clarity):

n	operation	prefix	confusion value
3	Р	BOS	0.218691
2	D	В	0.095995
1	. D		0.072822
3	1	BOO	0.064946
3	D .	во	0.059754
2	l l	BB	0.055001
2	ı	во	0.050121
3	ı	BOS	0.017041
3	P ,	воо	0.016986
2	. <b>P</b>	BB .	0.015694
1	P	D	0.011988
1	Р	Ε	0.011813
1	ı	E	0.010596
2	P	вw	0.010545
3	Р	ВОА	0.004753

PBOS is pulled from queue 390 as the highest probability prefix in the queue: n equals 3 so BOS is moved to top list 292. PB is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was not an insertion so n is incremented: the propagation routine is reentered. Queue 390 becomes:

	<u>n</u>	<u>operatio</u>	on prefix	confusi	ion value
5	1 3 3	D I D	BOO BO	0.07282 0.06494 0.05975	16 54
10	2 2 3 3 2 1	I I P P P	BB BO BOS BOO BB D	0.05500 0.05012 0.01704 0.01698 0.01569 0.01182	21 11 36 94 38
15					
20		3	I P D	E BW B BOA	0.010596 0.010545 0.009121 0.004753
20		3	P	BUA	0.004/53

D is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was not an insertion so n is incremented: the propagation routine is reentered. Queue 390 becomes:

C	operation	prefix	confusion value
3	ı	воо	0.064946
2	P	0	0.063608
3	D	во	0.059754
2	i i	BB	0.055001
2	1	во	0.050121
3	1	BOS	0.017041
3	Р	воо	0.016986
2	P	88	0.015694
1	Р	D	0.011988
1 1	Р	Ε	0.011813
1	I	Ε	0.010596
2	Р	вw	0.010545
3 ,	D	В	0.009121
2	D		0.006324
3	P	BOA	0.004753

IBOO is pulled from queue 390 as the highest probability prefix in the queue: n equals 3 so BOO is moved to top list 292; PO is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was not an insertion so n is incremented; the propagation routine is reentered. Queue 390 becomes:

	<u>n</u>	operation	prefix	confusion value
5	3 2 2 3 3 3	D I I P	BO BB BO OS	0.059754 0.055001 0.050121 0.034306
10	3	I P	BOS BOO	0.017041 0.016986
	2	P	ВВ	0.015694
15	1 1 1	P P I	D E E	0.011988 0.011813 0.010596
	2 3	P I	<b>BW</b> 00	0.010545 0.010188
20	3 2 2	D D D	O B	0.009374 0.009121 0.006324
	3 3 3	P I P	BOA OS OO	0.004753 0.002673 0.002665

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PBO is pulled from queue 390 as the highest probability prefix in the queue; n equals 3 so BO is moved to top list 292: IBB is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was an insertion so n is not incremented: the propagation routine is reentered and does not yield any valid prefixes. IBO is pulled from queue 390 as the highest probability prefix in the queue: n is less than 3 and the prior operation was an insertion so n is not incremented; the propagation routine is reentered. Queue 390 becomes:

0.002665

	n	operation	prefix	confusion value
	3	Р	os	0.034306
35	2	Р	воо	0.028937
	3	l l	BOS	0.017041
	3	P	BOO	0.016986
	2	Р	88	0.015694
	· 1	P	D	0.011988
40	1	Р	Е	0.011813
*	1.	1	E	0.010596
	2	Р	BW	0.010545
	3	ł	00	0.010188
45	3	D	0	0.009374
	2	D	В	0.009121
·	2	I	воо	0.008720
	2	D		0.006324
	3	Р	BOA	0.004753
50	3	l I	os	0.002673

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POS is pulled from queue 390 and moved to top list 292: PBOO is pulled from queue 390 as the highest probability prefix in the queue; n is less than 3 and the prior operation was not an insertion so n is incremented: the propagation routine is reentered. Queue 390 becomes: . .

n	operation	prefix	confusion value
3	ı	BOS	0.017041
3	Р	800	0.016986
2	Р	8B	0.015694
3	Р	BOOS	0.015607
1	P	D	0.011988
1	Р	Ε	0.011813
1	l l	Ε	0.010596
2	P	вw	0.010545
3	l l	00	0.010188
3	D	0	0.009374
2	Ð	В	0.009121
2.	ł	800	0.008720
2	D	٠. 🚤 ۽ ٠	0.006324
3	P	BOA	0.004753
3	1	вооо	0.004635
3	D	воо	0.004264
3	l I	os	0.002673
3	Р	00	0.002665

<sup>I</sup>BOS is pulled from queue 390 as the highest probability prefix in the queue: n equals 3 but this is a repeat lowered value prefix so it is dropped. <sup>P</sup>BOO is pulled from queue 390 and similarly dropped. Fig. 14 follows the propagation routine through <sup>P</sup>DO. The process is continued until queue 390 is exhausted or there are one hundred and fifty prefixes in top list 292. The top 13 prefixes are shown in Fig. 15.

Discrete rerecognition of the top one hundred and fifty prefixes against the uttered prefix 230 yields three prefixes in ranked order. If the top recognized prefix 242 from the original discrete recognition of the uttered word (POS) is already included in ranked list 264 it is not added. Corresponding words 240 are hypothesized:

prefixes	hypothesized words 240
BOS	boscage. boskage, bosh, bosk, etc.
POS	posada, pose, Poseidon, poser, etc.
DOS	dos. dosage, dose. dosido,
dosimeter,	doss. dossal, dossier. dost

Ranked word list 247 is formed from discrete rerecognition against the uttered word 232:

postage dosage boscage boskage

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dossal

dossier

poser

The distance parameters associated with prefixes 264 are then added to the distance parameters of words 247 that include corresponding prefixes and ranked list 247 is reranked according to the new distance parameters. The reranked list is then displayed to the user for selection.

Referring to Fig. 17, a user interface 700 permitting a user to select from ranked word list 247 is shown. Here, the word was disco, the recognizer recognized fiscal, the user spelled DIS, and disco appeared as choice 9 in list 247. Selecting 9 on a keyboard (not shown) replaces fiscal with disco.

The confusability matrices are experimentally determined by having a user spell predetermined words to the speech recognizer and comparing the recognized spelling to the known spelling. Referring to Figs. 16-16a, the training algorithm prompts the user to spell BED. The user spells BED and the recognizer recognizes BET. Baum Welsh training

in the context of Hidden Markov Models is a standard technique in speech recognition. See, for example, Rabiner, L. R., and Juang, B.H., "Introduction to Hidden Markov Models," *IEEE ASSP*, pp. 4-16, January 1986. The invention utilizes a modification of Baum Welsh training to determine the probability of permutations, insertions and deletions for each symbol in the context of each symbol.

Permutations build diagonally, deletions horizontally, and insertions vertically. Permutations feed all three nodal points, deletions feed permutation and deletion nodal points, and insertions feed permutation and insertion nodal points. The points in each nodal point are arranged as (insertion, permutation, deletion). Permutations have an additional factor of 10 if the letter is correct and a factor of 2 if the letter is not correct. In the forward alpha direction of Fig. 16, the silence node starts with values of (1, 1, 1) for (insertion, permutation, deletion) respectively. All other nodal points start with values of (0, 0, 0). In the backward beta direction of Fig. 16a, the lower right hand node starts with values of (1, 1, 1) and all other nodal points start with values of (0, 0, 0). The forward and backward diagrams are used to calculate confusability probabilities as follows:

		ins per del	E E E	D D D	E E	12 12 2	0 1 1	(12/260*0/260) (12/260*1/260) (2/260*1/260)
35								
30	ins per del	sil sil sil	B B B	T T	0 1 1	1 1 0	(1/26	0*1/260) 0*1/260) 0*0/260)
25	ins per del	В В В	E E E	B B	1 1 0	2 4 4	(1/26	0*2/260) 0*4/260) 0*4/260)
	ins per del	B B B	E E E	E E	10 10 10	2 2 2	(10/2	60*2/260)*10 60*2/260) 60*2/260)
20	ins per del	sil sil sil	B B B	B B	1 1 1	22 24 22	(1/26	0*22/260)*10 0*24/260) 0*22/260)
15	node	context	prompt	recoq.	alpha	<u>beta</u>	probabi:	lity

Repetitive probabilities for the same node (operation), context, prompt and recognized symbol are added to determine the probability of confusing the recognized symbol with the prompt. This procedure is carried out until the proportions between the confusions becomes more or less stable indicated that a majority of confusion phenomena have been captured. Anomalies in the data can be smoothed by looking at related confusions, i.e., the probability of confusing e with a in the context of b is related to the probability of confusing a with e in the context of b. It is useful to have several speakers participate in the training process to capture a large variety of possible confusion errors. The resulting matrix may be customized for a particular user.

Speech recognition in accordance with the invention can be performed whenever there are two or more utterances that include related data, e.g., knowing the city and state the zip code is known, knowing the spelling of a word the word is known. Other examples of related data are inventory name and number. flight origination/destination and flight number. A database containing the relationships between the data is consulted to hypothesize one set of data from the other. Referring to Fig. 9, a first utterance 150 is recognized 151 by continuous recognition. A confusability algorithm 153 creates a ranked list including entries that the recognizer would be likely to confuse with the recognized utterance 152 and hypothesizes a list of second utterances 155 by consulting a database 154.

A discrete recognizer 157 recognizes a second utterance 156 (second utterance 156 contains data redundant with first utterance 150) by recognizing the utterance against a database 158 and creates a list of possible second utterances 159. The hypothesized list of second utterances 155 and the list of possible second utterances 159 are merged 160

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to form a second utterance list 161. Second utterance list 161 is discretely rerecognized 162 against the second utterance 156 and a ranked list of second utterances 163 is formed. Ranked list of second utterances 163 is compared 164 to hypothesized second utterances 155, the top ranked second utterance being compared first. The first ranked second utterance that shows up in the hypothesized second utterances 155 is chosen 165.

If the choice is incorrect or the ranked list is exhausted without finding commonality, possible first utterances are hypothesized 166 from the ranked list of second utterances 163 by consulting a database 167 to form a list of hypothesized first utterances 168. The recognized first utterance 152 is merged 169 with the hypothesized first utterances 168 and the resulting first utterance list 179 is discretely rerecognized 171 against the original first utterance 150 to form a ranked list of first utterances 172. The second first utterance on the ranked list is evaluated 173.

The speech recognizer is able to inform the user of bad data, i.e., no commonality was found between ranked list of second utterances 163 and hypothesized second utterances 155, and the second first utterance on the ranked list 172 has a distance parameter that is beyond the acceptable limit. Appendix A is the source code in C++, including header files, for the city/state/zip sort application. Appendix B includes additional source code in C++, including header files, for the prefix/word application. As compared to the city/state/zip application, in the prefix/word application, the hypo.h. hashalfa.h and hypo.cpp files have been modified, choice.h has replaced wapp.h and choice.cpp has replaced wapp.cpp, and trie.h and trie.cpp have been added.

Other embodiments are within the scope of the following claims. The first and second utterances can be two parts of one utterance. The recognition system can be used with an optical character recognizer instead of a speech recognizer.

5	-	void	void ch	orte ;	ā ·	card, int		ca >	~		3	2		unsigned uc	void Ch	volue :		1. Function	SWOI DANN	Manp.CPP Main module: Wirn Copyright (c) 1991-1 Copyright (c) 1991-1 Author: Greg Gadbois Created: 1991-1995	)* Description	<i>шишиши</i>
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Binclude string.hv
Binclude sdir.hv
Binclude strinb.hv
Binclude strdlib.hv
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#include "fepext.h"
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#include "deamon.h"
 5
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class CustomCitySL
class WordIdToCustomCityHS
class FindFilePath
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10
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   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rdefine WAKEUP STATE
Rdefine ZIP STATE
Adefine CITY_STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static char fembigitsVocI)
static char malCityVocI)
static char malDigitsVocII
static char* cityVoc = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #define FEP_ENDOFOSPEECHTHRESH 13
                                                                                                                                                                                                                                                                                                          static char lastZtpOutCommPort( UTI PROMPT LENGIN ) = "";
static char lastStateOutCommPort( UTI PROMPT LENGIN ) = "";
static char (astCityOutCommPort( UTI PROMPT_LENGIN ) = "";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static char bluePrefix( 6 ) = "00";
static char orangePrefix( 6 ) = "00";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static char userPathString[ 256 ] * ".";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static char origCityUser[ 128 ];
static char tmpCityUser[] = "tmpCity.usr";
static char* cityUser = origCityUser;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          static char femCityVocIJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // STATIC VARIABLES. Names of vocabularies are defined here
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              extern char stateAliasString[];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static char* digitsVoc = 0;
                                                                                                                                                                                                class ChoiceListStats
                                                                                                                                                                                                                                          protected:
   30
                                                                                                                                                                                                                                                                          Purpose: tracks results recognizer finds and the recognition errors. Info used to update confusability matrix. Can be turned off later.
                                                                                                                                   int digitStats( 500 );
     35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             = "ctall.vof";
= "ctall.vom";
= "ctall.vom";
                                                                                                Page 2 of 29
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          45
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           55
```

```
void ChoiceListStats::recordResult( comet chere erc )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .∵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // Print statistics to file
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void CharceListStats::printStats()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   :
_
                                                                                                                                                                                                                                                            ** ), v(8), v(9) );
                                                                                                                                                                                                                                                                                             a> ), v(3), v(4).
                                                                                                                                                                                                                                                                                                                                   => d\t%d\t\n",
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void setOpenRecResult( const char* src ) ( strcpy( openRecResult, src );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fill "out a fopen( "digstats", "ar" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 char "o = openRecResult;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char operMecResult[ 128 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void printStats();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for( int i = 0; i < 5; ++1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void recordResult( const char* src );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( findigit( *o ) || findigit( *src ) )
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  digitState( | 1000 + 10°( 'erc. - '0' ) + ( 'o - '0' ) ] += 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( *** a && *** src ss ' ' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int "v = digitState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            for( int i=0; i<3; ++1 )
                                                                                                                               memset( openRecResult, 0, sizeof( openRecResult ) );
                                                                                                                                                                    fclose( out );
 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ....;
                                                                                                                                                                                                                                                                                                                                                                                                                     fprintf( out, "// %d\n", i );
                                                                                                                                                                                                                                                                                                                                                                                    for( int j=0; j<10; •• j )
                                                                                        WAPP.CPP 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                  :
                                                                                                                                                                                                                                            ĕ
 15
20
                                                                                                                                                                                                                                                                                                                 v(0), v(1), v(2
                                                                                                                                                                                                                                                                                  v(5), v(6), v(7
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASS Diguin

// CLASS Diguin

// Purpose: Drives the application.

// Purpose: Drives the application.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // declare class for the statistics static ChoiceListStats;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class Diguin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 public:
                                                                                                                                                                                                                                                                                                                                                                                                                                            x> tate, error static long
 30
                                                                                                         // DRAGON recognizer variables statle Speechlaste speechlaste speechlaste statle UttChannel charvel; statle UttChannel rightt,
                                                                                                                                                                                                                                              static ZipResult
static ZipHypoAC
static Command
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     static chart
static short
static short
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // VARIABLES
static bool
static bool
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Static BOOL FAR PASCAL _export undProc( MAMO, UINT, UPARAM, LPARAM ); static NAMO hund;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Static
Static
                                                                                                                                                                                                                                                                                                                   // App specific CLASSES and STAUCTURES
static AC< CityMypothesis > cityMypo;
static AC< long > lips;
                                                                                                                                                                                                                                                                                                                                                                                      static char digitSpelling[ UTT_PROMPT_LENGIN ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static int
 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               name;
wordPause;
startThresh;
endThresh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           messageMandled;
sawError;
ignoreErrors;
fixError;
wastistening;
                                                                                                                                                                                                                                                                                                                                                                                                                                            nuterrors;
                                                                                                                                                                                                                                            ripResult;
ripHypo;
comm(4);
                                                                                    Page 3 of 29
                                                                                                                                                  speechlask;
channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  appState;
 40
   45
                                                                                                                                                                          // speech driver tesk ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // zipa, city, a
   50
```

```
NUND
bool
SpeechTask*
Recognizer*
** API (dr
                                                                                                                                                                            UtiChannel*
bool
bool
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ت:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     static SD MORD cancel Word;
static SD MORD back abel Word;
static SD MORD goloSleepWord;
static SD MORD watedpWord;
static SD MORD watedpWord;
static SD STATE testState;
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // sub service routines for the main winProc services static bool isConceliphrase(); static bool isCanceliBedlabelGoloSleepDrProvince( KNMD static bool isCanceliBedlabelGoloSleep( KNMD ); static void itsGoodWaps( CityHypothesis& ); static void itsGoodWaps( CityHypothesis& ); static void itsBad mamb, UttCharmei ; static void outCommPort( const char* zp, const char* const char* zp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // FUNCTIONS
static void reporterror( int code, char far *message );
static void SD_CALLBACK _export postSpeechEvent( SD_CHANKEL, SD_CHANKEL_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Diguin variables and classes defined in the Diguin Class are made global.  
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static void onCommCheckMsg( MAND hand, Comm* cm );
static void onCommSendSyncMss( MAND hand, Comm* cm );
static void onTimerDrawAU( MAND hand, UINT id );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // wndProc() services
static bool on[nitDialog( NuMD hand, NUMD topCntrl, long );
static void orDestroy( NUMD hand );
static void orSysCommand( NUMD hand, Ulul cad, int x, int y );
static void orCommand( NUMD hand, Ulul cad, NUMD x, Ulul y );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // scratch buf UTI_PROWPT_LENGTH 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static void buildCityNypothesis();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // core wndProc function
startic void anSpeach( MUMO hWnd, SD_CMANNEL ch );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           friend int PASCAL WINMING MINSTANCE, MINSTANCE, LPSTR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static bool isCertain( SO_WORD );
                                                                                                                                                                            DigMin::hWmd;
DigMin::messgeHandled;
DigMin::speechTask;
DigMin::racoq;
draycpp.*)
DigMin::channel;
DigMin::sawError;
DigMin::sawErrors;
10
                                                                                                                                           WPP.CPP 7-22-95 11:36e
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rt* foundDistance );
rp, const char* st, const char*
                                                                                                                                                                                                                                                                                             // recogniter, wrapper around
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3
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                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ut tChannel
Ut tChannel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bool
long
short
short
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZipResult char
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chare
                                                                                                                                                                                                                                       struct ConfigCommends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ° ≥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC< CityHypothesis > AC< long > OlgVi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZipłlypoAC
                                                                                                                                                                                                             \ddot{}
                                                                                                                                                                                                                                                                                                                                                                             static char* setCommand( char* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   const cher* name;
cher* ("command)( cher*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Table that contains the names of the functions and the pointers to the functions that can be called in the configuration file
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      error
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Diguin::cancelword = 0;
Diguin::badt.badtWord = 0;
Diguin::goloSiecpMord = 0;
Diguin::unkelpMord = 0;
Diguin::same?ipMord = 0;
Diguin::testState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Diglin::wastistening;
Diglin::fixError = 1;
Diglin::numError;
Diglin::wordPause;
Diglin::starThresh;
Diglin::endThresh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OtgVin::zipResult;
OtgVin::digitSpelling[ UTT_PROMPT_LENGIN ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OlgWin::zipUtt;
OlgWin::cityUtt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Digwin::buff UTT_PROMPT_LENGTH );
Digwin::comm(4);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OlgWin::zips;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Olghin::ziphypot 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DigWin::name = "dragon123\0
     35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Olguin::cityHypot 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Olgvin: appState;
                                                                                                                                              Page 4 of 29
        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .:
           45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // scratch buf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // sipm, city,
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<u>::</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       class WordIdToCustomCityHS: public HS< CustomCitySt >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class CustomCitySL : public CitySL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // CLASS CustomCitySL
                                                                                                                                                                                                                                                                                                            unsigned WordIdIoCustomCityMS::keyHash( const SlinkBase* slb ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // CLASS WordIdToCustomCityHS
// CLASS WordIdToCustomCitySt, Hash Table
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Purpose:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ининининининининининининининининининий
                                                                                                                                                                                int WordidioCustomCityHS::compare( const SLinkBase* sibl, const SLinkBase* sib2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Purpose:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 61
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Process Command Words and Provinces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 customCitySt( long 1, char* n, SD_WDRD id, bool isCntrl )
citySt( 2, n ) { wordid = id; isControlWord = isCntrl; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SD_WORD wordid;
bool isControlWord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unsigned keyMash( const SLinkBase* ) const;
                                                                                                                                                                                                                                                                     return ((CustomCitySL* )slb)->wordId;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WordIdIoCustomCityMS( unsigned maxSize = 32, unsigned initialSize = 32 ) : MS< CustomCitySt >( maxSize, initialSize ) ( )
                                                                                                                     return( ( (CustomCitySt . ) slb! ) . > wordld .
                                                                                                                                                                                                                                                                                                                                                                                                                                          int compare( const SlinkBase*, const SlinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       internal to mercury.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Take word 10 and find rip code (dummy for those special provinc
10
                                                                                         WAPP.CDP 7-22-95 11:36a
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25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static Customityst albertast( 20, "alberta",

static Customityst britishColumbiast( 21, "britishcolumbia",

static Customityst fabradorst( 22, "labrador",

static Customityst samitobast( 23, "manitoba",

static Customityst manitobast( 24, "manitoba",

static Customityst newFoundlandSt( 25, "mewFoundland",

static Customityst newFoundlandSt( 25, "morthwesterritorias", 0, 0);

static Customityst morascotiast( 26, "morthwesterritorias", 0, 0);

static Customityst morascotiast( 28, "morthwesterritorias", 0, 0);

static Customityst morascotiast( 28, "morthwesterritorias", 0, 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          static CustomCitySL goToSleepSL(

p) 0 1);
static CustomCitySL wakeUpSL(
p) 0. 11.
                                                                                                                                                                stat/p char* setSpecialZip( CustomCitySL* sl; char* value )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 static CustomCitySt cancelAddressSt(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Some general commands static CustomCitySt badtabetSt(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // set a variable... the particular data and functions known to setCommand()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     static CustomCitySt mexicoSt(
                                                                                                                                                                                                                                                                                                                                                        static CustomitySt princeEdwardIslandSt(
static CustomitySt quebecSt(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             static CustomCitySL sameZipSL(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static WordIdIoCustomCityNS zipCommandWordsNS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // state specific rules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30
                                                                                                                                         int : - 0;
    35
                                                                                       P. S of 29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ( (CustomCitySL* )slb2 )->wordld );
                                                                                                                                                                                                                                                                                                                                                                          32, "pukonterritory",
                                                                                                                                                                                                                                                                                                                                                                                                                   31, "saskatchewan",
                                                                                                                                                                                                                                                                                                            40, "mexico",
                                                                                                                                                                                                                                                                                                                                                                                                                                                               "princeedwardistand", "quebec",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3. "samezip",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5, "wakeup",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4, "gotosleep",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2, "cancel address"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1, "badlabel",
      45
    50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0, 0 );
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static char* setNedFunstickZip( char* value ) ( return setSpecialZip( śneuBrun static char* setNedFunstickZip( char* value ) ( return setSpecialZip( śneuBrun static char* setNeuFoundlandZip( char* value ) ( return setSpecialZip( śneuFoun articicchar* setNovaScotiaZip( char* value ) ( return setSpecialZip( śnovaScotiaZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                atatic chare setMexico
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          static chare setSaskatchewarZipt chare value ) ( return setSpecialZipt Asaskatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 static chare set@uebecZip( chare value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             static char' setBadLabelZipt char' value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         etatic chare
                                                                                                                                            // Helper function
                                                                                                                                                                                                 static Commpars* commars[ 4 ];
static char* commformat[ 4 ];
                                                                                                                                                                                                                                                                                                                                                                                                                  as LanckicoSt, value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ric chare setMenitobeZip( chere value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SontarioSL, value );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chare setConcelAddress2ip( chare value ) ( return setSpecialZip( &cancel/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      si-vaip = rest;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11( 1 ==
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for( char *szvalue; *s; **s )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           long test = mtol( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                are setOnterioZip( chare value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       * setSameZipZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bettuk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              setLabradorZip( chare value )
                                                                                                                                                                                                                                                                                                                                                                                                   setBritishColumbiaZip( chare value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         setAlbertaZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 0 )
return "Bad special Zip code assingment";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                          estTerritoriesZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                      p( chare value )
                                                                                                  WUP.OP 7-22-95 11:364
                                                                                                                                                                                                                                                                                                                       endip( char* value )
15
                                                                                                                                                                                                                                                                                                                                                            ( return setSpecial2ip(
                                                                                                                                                                                                                                                                                                                       ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ( return setSpecialZip(
20
                                                                                                                                                                                                                                                                                                                                                                                                                                      ( return setSpecialZip(
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( return setSpecialZip(
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ( return setSpecial2ip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                   ( return setSpec
  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static char* setDefaultCompars( char* value )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 => 1 9600 n 8 1";
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rmatString );
if( numFields < 5 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for( char "s n value; "s; ++s )
if( "s =n ',' ) "s = ' ';
                                                                                                                                                                                                                                                                                                                                                                                                     else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( 0)port || port>6 )
return "bad commPort number, (must be 1 thru 4)";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char parityStrf 10 1, comPortf 20 1, formatString[ 128 ];
                                                                                                                                          compare( port-1 ) * new Compare( port, beid, parity, databite, stopbite
                                                                                                                                                                                                                                                                                                                                                                                                                                        else if( stopBits == 2 )
stopBits = TWOSTOPBITS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( baud != 19200 && baud != 14400 && baud != 9600 &&
    baud != 4800 && baud != 2400 && baud != 1200 }
    return "unknown commPort Baud rate";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // check to see if the arguments are reasonable and set the port...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int baud, dataBits, stopBits;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( stopBits = 1 )
stopBits = ONESTOPBIT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Case 'D':
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int port=comPort[ 3 ] - '0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int numfields = sscanf( value,
                                                                                                                                                                                                                                                                                                                         if( numfields == 5 )
    commformat( part-1 ) = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( dataBits i= 7 && dataBits i= 8 )
return "strange number of commont dataBits";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       suitch( tolower( 'parityStr ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int parity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    default:
                                                                                                                                                                                                                                                                                                                                                                              return "strange number of commont stopBits";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return "unknown commont Perity";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return "wrong number/order of erguments... ex:\n\teet com = com
                                                                                                                                                                                                     strepy( commformat( port-1 ), formatString );
                                                                                                                                                                                                                                           commformat( port-1 ] = new char( atrien( formatString ) + 1 );
      35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       parity a MOPARITY;
parity = ODOPARITY;
parity = EVEMPARITY;
parity = MARKPARITY;
parity = SPACEFARITY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           comPort, Abaud, parityStr, Adatablts, Astopbits, fo
                                                                                            Page 6 of 29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IN PRINT TO PRINT
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static cher* setStateAlias( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static char* setPureState( char* value )
(
                                                                                                            static char* setfepPar( WDRD id, char* value )
                                                                                                                                                                                                                                                                                                                          static char* setUserPath( char* value )
                                                                                                                                                                                                                                                                                                                                                                     // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Helper function
                                                                                                                                             // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return "in Ups.cfg stateAlias, incorrect state spelling (must be lowercase and one word)":
 5
                                                                                                                                                                                                                                           stropy( userPathString, value );
                                                                                                                                                                                                                                                                         .....
                                                                                                                                                                                                                                                                                               for( char "e = velue; "a && lisspace( "s );
                                                                                                                                                                                                                                                                                                                                                                                                                                         sarypure( TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1/( 82 .. 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        StateZip* sx * StateZip::findStateZipt value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for( char *s = value; *s && lisspace( *s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                $2.>pure( IRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( sz == 0 )
return "bad Pure State in UPS.CFG";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      StateZip* sr = StateZip::findStateZip( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .s • '\0.'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( char *s = value; *s && fisspace( *s );
                                                                                         for( char "s = value; "s && lisspace( "s );
                                                                                                                                                                                                                 return 0;
                                                                                                                                                                                                                                                                                                                                                                                                             return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return 0;
10
                                                           WAP.COP 7-22-95 11:36.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static char* setEndDfSpeech( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static char* setStartOfSpeech( char* value )
{
                                                                                                                                                                                                                                                                                                                                                                                                 static char* setNothing( char* )
                                                                                                                                                                                                                                                                                                                                                                                                                            // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Helper function
                                                                                                                                                                                                                                                                                                                  static ConfigCommands setCommands[] = (
 30
                                                                                                                                                                                                                                                                                                                                                                     return 0;
                                                                       ( "ZipRange",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( setfepPar( fEP_STARIOFSPEECHINRESH, value ) )
return "startOfSpeech Not Set";
                                                                                                                                                          ( "StartOfSpeech"
                                                                                                                                                                                        ( "UnerPath",
                                                                                                                                                                                                                   ( "Pure".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return "Par Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           it( value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :.0/. . ..
                                                                                                                       ( "EndatSpeech",
                                                                                                                                                                                                                                               ( "ComPort",
                                                                                                                                                                                                                                                                          Comme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( setTepPar( fEP ENDOFOSPEECHTHRESH, value ) )
return "EndofSpeech Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WORD Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fep_Setpar( SUPER_USER, id, v );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     v = (NORD )atol( value );
 35
                                                       Page 7 of 29
  40
                                                                                       setHuthing
                                                                                                                                 setEndOiSpeech
                                                                                                                                                            setStartOfSpeech
                                                                                                                                                                                        setUserPath
                                                                                                                                                                                                                                            setDefaultCommPers
                                                                                                                                                                                                                                                                            setDefaultCommers
                                                                                                                                                                                                                    selPureState
                                                                                                                                                                                                                                                                                                     seibefaultCompara
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static char* setCommand( char* var )
(
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ( "Mexico",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ("Menitobe",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( "BadLabe!",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ( "BritishColumbia", ( "Labrador",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (0,0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ( "Yukanlerritory".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ( "Alberta".
                                                                                                                                                                                                                                                                                                                            boot foundEqual = (*value == '=');
                                                                                                                                                                                                                                                                                                                                                                                                                      white( issimum( evalue ) || evalue == '_' )

**value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             white( isspace( *var ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ( "Newfoundland"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( "NewBrunswick"
                                                                                                                                                                                                                                                                                                                                                                           fit( *velue == '\0' )
return "no value found in set command... ex: set variable = valu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cher value = var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ),
("Sesketchewan",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ( "Onterio",
                                                                                                                                                                                                                                                                   ill ItourdEqual )
                                                                                                                                                                                                                                                                                                 "WorthWestTerritories",
                                                                                          while( "value && isspace( "value ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "princeEdwardIsland", setPrinceEdwardIslandZip
"Quebec",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Quebec".
                                                                                                                                                                                                                             unite( isspace( "value ) )
                                                                                                                                                                                if( *value (= '*' )
return "no \"=\" sign in set command... ex: set variable
10
                                                                       WAP.CPP 7-22-95 11:36e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           setBritishColumbiaZip
setLabradorZip
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 setBadLabel 2 ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         setMorthWestTerritoriesZip
setMovaScotisZip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    setlleuFoundland2 ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                eetHeuBrunswick2ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      setAlbertalip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      settukonlerritory2ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    setSaskatchevan2ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            setOnterio2ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               eetManitobalip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           setMexicoZip
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       youd perseConfig( const char* filename
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ü
                                                                                                                                                                                                                   ..
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 0 );
char line( 256 ];
int lineHumber * 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          filE *cfgfile = fopen( filename, *ri* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  char *errorMessage * ( cfgFile ** 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( int i=0; setCommands( i ].name i= 0; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           while( errorMessage *= 0 && fgets( line, sizeof( line ), cfgflle ) le 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return "unknown set variable";
                                                                                                               if( errorMessage )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( stricap( var, setCommands( i ).name ) == 0 )
return setCommands( i ).command( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                          while( fisspace( "value ) && "value t= 1\0")

++value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                while( isspace( *var ) )

**var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   char "var " line;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (f( *var sa *#* || *var sa *\0' )
continue;
                                                                                                                                                                                                                                                                                        for( int i=0; cfgCommands( i ).name i= 0; ++1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char *value = var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ** LineHumber;
                                                                                                                                                                                                                                                                                                                                                                                                          ift *value 1= *(0")
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ? "could not open UPS.CFG file"
                                                                                                                                                                                                                                                                                                                                                                               *value** * '\0';
                                                                                                                                                                                                                                                                                                                                        if( stricep( var. cfgCommends( i ).name ) == 0 )
                                                                                                                                                                                                                                errorMessage = cfgCommands( i ).command( value )
                                                                                                                                                                                        break;
                                                                            Page 8 of 29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        class findfilePath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ∷
                                                                                                                                                                                                                                                                                                                                                                                                                                                 public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Purpose:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // class findfilePath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NessageBox( DigWin::hWnd, errorMessage, errorType, MB_Ox [ MB_IC === OMEXCLAMATION );
                                                                                                                                    findfilePath::defaultFileSpec() = ""."";
findfilePath::defaultPath() = ".\0";
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bool findfirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( cfgFile ) fclose( cfgFile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        char *pathString, *path;
char *fileSpec;
int attribflag;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static char defaultPath();
static char defaultFileSpec();
                                                                                                                                                                                                                                           bool FindFitePath::findFirst();
bool FindFitePath::findMext();
                                                                                                                                                                                                                                                                                                                                                                                                                   FindfilePath( char* fspec, char* p =0, int flag =fA_NORMAL );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           struct fiblk attrib;
                                                                                                                                                                                                            char* filename() { return attrib.ft_name; }
                                                                                                                                                                                                                                                                                                                                                                                         findfilePath()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  find file using PATH variable
                                                                                                                                                                                                                                                                                                                                           if( pathString I= defaultPath )
    delete pathString;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   itae( lineNumber; errorType + 20, 10 );
                                                                                                                                                                                                                                                                                                if( fiteSpec to defaultFfleSpec )
    delete fileSpec;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    char errorType( 40 ) = "UPS.CFG error, line
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                                                                                    WUP.CPP 7-22-95 11:364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>5</u>
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bool findfilePath::findfirstPrimitive()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           findfilePath::findfilePath( char* fspec, char* p, int flag )
(
                                                                                                                                                                bool findfilePath::findfirst()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Constructor
                                                                                                                                                                                              // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                      :
                                                                                                                              " path = pathString;
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             el se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       attribflag = flag;
                                                                                                return findFirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (or(;;)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( fspec )
                                                                                                                                                                                                                                                                                                                                                        path ** * strlen( path ) + 1;
                                                                                                                                                                                                                                                                                                                                                                                     p = stpcpy( p, fileSpec );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cher* p = stpcpy( iSpec, path );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ispec = defaultfileSpec;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fileSpec = new char[ strien( fspec ) + 1 );
strcpy( fileSpec, fspec );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pathstring = path = defaultPath;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 char* !Spec = new char[ strien( path ) + strien( fileSpec ) + 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( *path == '\0' )
return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   path = pathString = new char( strien( p ) + 2 1;
strcpy( pathString, p );
for( p = pathString, *p; ++p )
   if( *p == '; ' )
                                                                                                                                                                                                                                                        delete fSpec;
                                                                                                                                                                                                                                                                                                                             if( Ifindfirst( fSpec, Lattrib, attribflag ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;·0/: # dee.
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                                                                                                                                                                                                                                                                                   delete fSpec;
return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                   .b. = ./.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ing, p );
ring; *p; **p )
*p * '\0';
                                                                                   700 9 01 23
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// Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // initialisation function for DigMin class (MDT constructor)
// the global variable appState is set to ZIP_STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bool findfilePath::findNext()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bool Olgwin::onIn:tDislog( MAND hDlg, MAND, long )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WessageBox( hDlg, "Comm Error", "Port Initialize sy tion feiled", MB_DX | MB_ICONEXCLAMATION );
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( !findhext( fattrib ) )
    return fauf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hund . 1019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return findfirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     speechlask = new Speechlask( name, reportError );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         StateZip::initZipToUsaStateZip();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recog . 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         parseConfig( "ups.cfg" );
                                                                                                                                                                                                                                                                             findfilePath ffPath( "".un)", userPathString );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for( int i=0; ist; **i )
                                                                                                                                                                                                              // set up the usr listbox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fep_Setper( SUPER_USER, 13, 87 );
fep_Setper( SUPER_USER, 12, 58 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             speechlask->setPar( "track-mem", (short ) Hrack );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   speechlask->getPar( "track-mem", &track );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int16 track;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( comPars( i ) != 0 )
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Memory debug stuff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              commit i = new Comm( hDig, comParsi i ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( comm( i )->error() != 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                     delete comperst i ];
                                                                                                                                                               WAPP.CDP 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    delete commi i l;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              comm( i ) = 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void formatOutput( char* outBuf, const char* format,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SenaDigitemMessage( hDig, END_THRESH_SLIDE_ID, LAM_SEISCROLLRANGE, 0, 0x0 => 0700010t ); senaDigitemMessage( hDig, END_THRESH_SLIDE_ID, LAM_SEISCROLLPOS, 0x0030, senaDigitemMessage( hDig, END_THRESH_SLIDE_ID, 0x0030, senaDigitemMessage( hDig, END_THRESH_SLIDE_ID, 0x0030, senaDigitemMessage( hDig, END_THRESH_SLIDE_ID, 0x0030, senaDigitemMessage( hDig, END_THRESH_SLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SendDigitemHessage( hDig, START_THRESH_SLIDE_TO, UM_SETECROLLBANCE, O, O #008000201 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :
::
                                                                                                                                                                                                                                                                                                                                                                                                                                         *> her* zip, const char* state, const char* city )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                it( ffPath.findfirst() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( i=0; i<100; **i )
                                                                                                                                                                                                                                                                                                                                                                          chare but = outBut;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char line [100];
cher spelling[50];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SenablgitemHessage( hbig, SIARI_THRESH_SLIDE_ID, LM_SEISCROLLPOS, 0x0050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SenablgitemHessage( hblg, WORD_PAUSE_SLIDE_ID, WM_SEISCHOLLPOS, 0x00a0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SendbigitemMessaget hbig, wond_PAUSE_SLIDE_ID, we_selschoullawige, 0, 0x0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  appstate = ZIP_SIATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // speechlask-vgetPar( "computation", &compttn );
speechlask-vsetPar( "computation", (short )2 );
// speechlask-vsetPar( "adapt-tolerance", (short )3 );
                                                                                                                                                                                                                                                                                                        while( *format )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      white( ffPath.findHext() );
                                                                                                                                                                                                              switch( *formet )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              char zipfileMame() = "zip/zip.000000000";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StateZip::InitHSs( zipfileHame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in tite == 0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     file file a topen( zipfileHame, "r" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        itoa( i, zipfiletame + 8 + (1<10), 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fclose( file );
                   35
                                                                                                                                                                               Page 10 of 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               continue;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             case '\\':
**format;
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                                                                                            break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cise
                                                                                                                                                                                                                                                                                                                                                                                           else if( tolower( *formet ) ==
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    else if( tolower( "formet ) == 'n' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( tolower( *format ) == 'r* )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               else if( tolower( *format ) == 's' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( tolower( *format ) == '1' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    else if ( tolower( "formst ) ** 'c' )
                                                                                                                                                                                                                                                                                                  else if( tolower( *format ) == 't' )
                                                                           WAP. CPP 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                                                                                            .. format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·· format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :../. = ../L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        const cher* c=city;
while( (*buf = *c++) != 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·· format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 'n':
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ·· format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           const char* ratip;
for( int i=0; i+5 && (*buf = *2++) += 0; ++i )
++buf;
                                                                                                                                                                                                                                  ·· format;
                                                                                                                                                                                                                                                                     :11/1 · ··/ud•
                                                                                                                                                                                                                                                                                                                                                                ·· format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .pufor = 'X';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ·· format;
                                                                                                                                                                           f( *format |: '\0' )
                                                                                                                                             *buf++ * format++;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void DigWin::outCommPort( const char* zp, const char* st, const char* cty )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // function that sends the recognition answer found in onSpace to the
// device via a comm port.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 => 2p, st, cty );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40 : "X2\r",
 30
                                                                                       s = outBuf + strien( outBuf );
                                                                                                                       'l toe( ++totalNumberOfPeckages, outBuf, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strcpy( lastZipOutCommPort, zp );
strcpy( lastSiateOutCommPort, st );
strcpy( lastCityOutCommPort, cty );
                                                                                                                                                       static long totalNumberOfPackages = 0;
                                                                                                                                                                                                                                                cher *s = outBuf + strlen( outBuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     channel.>beep( "ding.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assert( buf - outBuf < 256 );</pre>
                                                                                                                                                                                   SetWindowText( GetDigitem( hand, STATI_TEXT_ID ), outBuf );
                                                                                                                                                                                                                   etropy( e, " pkgs/hour
                                                                                                                                                                                                                                                                                                                                                                             if( (unsigned long)lastInterval > 1000 )
lastInterval = 1000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static long lastInterval = 0;
static time_t lastFime = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           char outBuff 256 );
                                                                                                                                                                                                                                                                              ltoe( rate, outBuf, 10 );
                                                                                                                                                                                                                                                                                                               lastTime = currentTime;
                                                                                                                                                                                                                                                                                                                                              long rate = (36001 * 10001 / SSL) / lastinterval;
                                                                                                                                                                                                                                                                                                                                                                                                                           lastInterval = (lastInterval + (currentTime · lastlime)) / 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       tong currentline * biostime( 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for( int i=0; i<4; ++1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            •buf = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if ( comm [ i ] )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        default:
•buf•• = •furmat•+;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              formatOutput( outBuf; compformat( i ) ? compformat( i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              comf i ]->combrite( outBuf, strten( outBuf ) );
                                                                        7 11 of 28
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void DigWin::reportError( int code, cher fer *message )
(
                                                                                                                                                                                                            Speech --- Board digitizes --- Multimedia (MM) layer discovers speech, and interrupts other Windows activities --- dragdev, the dil that deals with the front end (FEP), gets data from MM and decides whether we have speech or not(Ulterance detection).

If so, dragdev stores the utterance in its queue and it also calls postSpeechEvent. This function was handed to the channel when we opened the channel. In this way the microghome knows to use this callback function to get into the application for recognition.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      We do not process any data in this function. We want to get out of this interrupt as soon as possible.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Callback function, handed to the microphone channel when it was opened.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // postSpeechEvent()
                                                                                                                                             After we leave the interrupt we send ourselves a PostMessage UM_ChannelStart. When UM_ChannelStart is processed we direct the application to the function
                                                                                                                                                                                                                                                                                                                                                                                                                                         Its place in the control flow:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dragon speech driver error handler.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // if( stricmp( message, "Bad token" ) && stricmp( word handle:", 18 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // (
MessageBox( hund, buffer, "Wintalk SDAP! Error",
MB_TASKHODAL | MB_ICONST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Throw up an error message char buffer( 512 ); sprintf( buffer, "An error has occurred\n_code = 2d\n_message = 2s",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SetWindowText( GetDigitem Nind, STAI3_TEXT_ID ), outBuf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s = outBuf + strien( outBuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SetWindowlexi( GetDigitem( hWnd, SIAI2_IEXI_ID ), outBuf
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - HB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Itook numErrors, outBuf, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         strcpy( s, "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // terminate... kill the hTopParentVindow
//if( hUnd )
// PostNessage( hUnd, UM_CLOSE, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if ( ignoreErrors )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return;
ignoreErrors = YES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ignoreErrors = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pkgs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Badtabels
10
                                                                                                                        // prevent recursion
                                                                                                                      7-22-95 11:360
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             code, message );
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              message, "Invalid
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void DigWin::onCommCheckUsg( HWMD, Comm<sup>a</sup>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Make sure there is a start of ulterance message for any ulterance. It was observed that having ulterance and the related ulterance start message were out of spro. If PeekRessage return false, we will make sure to put a LM CHARNEL START message in. This makes it more robust to keep he number of ulterances and CHARNEL STARTS in sync.
                                                                                                                                                                                                                                                                                                                                                                               void DigWin::onCompSendSyncMsg( HWND, Comm<sup>®</sup> cm )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #define HANDLE UM COMM CHECK MSG( hund, ((fn)(hund, (Comma )|Param), 1L)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #define HANDLE LM CHANKELSTART(hund, LParam, (Param, fn) \ ((fn)(hund, (SĎ_CRANNEL )\Param), ll)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ) // EventHandler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void SD_CALLBACK_export DigWin::postSpeechEvent( SD_CHANNEL cb, 80_CMANNEL_EVEN => T_eventin )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             onSpeech().
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #define HANDLE LM COMM_SEND_SYNC_MSG( hund, uParam, IParam, in ) \
((in)(hund, (Comm* ))Param), il)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A similar trick is applied in onSpeech() at EndOfSwitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                   // helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // helper function
                                                                                                                                                                                                                                                                                                           ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( 0 == PeekMessage( &meg, hiard, UM_CHANNELSTART, UM_CHANNELSTART, PM_M OREMOVE | PM_NOTIELD ) )
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISERT( eventin ## SD_CHANNEL_START
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MSG msg;
                                                                                                                                                                                                                                                    cm->nendSyncHsg();
                                                                                                                                                                                                                                                                                                                        assert( cm == comm(0) || cm ==
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cm->checkMessage();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( cm == comm(0) || cm == comm(1) || cm == comm(2) || cm ==
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PostMessage( humd, LM_CHANNELSTART, (WORD )ch, 0 );
     35
                                                                                                                Page 12 of 29
       40
                                                                                                                                                                                                                                                                                                                           comm(1) || cm == comm(2) || cm ==
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            wParam, (Param, In ) \
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
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                                                                                                                                                                                                                                                                                                                                   COME (3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55
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static long right=0, wrong=0, predicted=0, addressConfidence=100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void DigWin::buildCityHypothests()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 extern const char* lto?ip( long num );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                *> ypo1 j l );
                                                                                                                                                                                                                                                                      )/
// gned long):, but );
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // build bigger city list here....
cityHypo.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // number of words on the choice list after discrete recognition
int i, j, k, cnt = ziputt.resultCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( cnt > 6 )
cnt = 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for( i=0, k=0; i*cnt; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZipHypothesis test! 6 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SD_word t = riputt.resultId( i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( j=0; jezipHypo.count(); **j )
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( j == zipHypo.count() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        iff t as ziphypot j 1.wordld )
                                                                                                                                                                                                                                                                                                                                                                                                                                                               file logfile = fopen( "wapp.log", "a+" );
                                                                                                      MAPP.CPP 7-22-95 11:364
                                                                                                                                                                                  assert( j i= zipHypo.count() );
                                                                                                                                                                                                                                                                                                                                                                                                                             ( logfile )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  new( (void* )Atest[ k++ ] ) Zipkypothesis( zipk
                                                                                                                                                                                                                                                                                                                                                                                       char buf ( UTT_PROMPT_LENGTH ) = ""
                                                                                                                                                                                                                                                                                                                                 if( t )
zipUtt.resultHame( buf, sizeof( buf ), i );
                                                                                                                                                                                                                                      fclose( logfile );
                                                                                                                                                                                                                                                                                             fprintf( logfile, "ResultWord = XId = Xs", (unxi
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CityHypothesis* DlgWin::rerecogZip( int* foundDistance ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // When recognized city name does not match zip hypotheses
// We are going to collect the zips for the city that should go with this
// city but that we somehow never hypothesized. If that new zip scores
// well, take it.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ç
Qe
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Number of words on choice list. The utt channel knows the choice lie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Get the range of zips for this state
StateZip° sz = StateZip::findStateZip( zipResult.stateMmme() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Create and set new ZIP state tmpState = recog->newState( "Imp?ip" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static SD_STATE tmpState=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for( i=0; i<k; ++i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          zipHypo.removeAll();
                                                                                                                                                                                                                                                                                                                                                                         2 ipHypothesis* th * 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog.>setState( tapState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( cnt == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int cnt = cityUtt.resultCount();
                                                                                                                                                                                                                                                                                                                   if( at )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         '// of the most probable riphypothesis to the least probable...
State2(p::zipioStateCities( &ziphypo[ i ], &cityhypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // order matters, it is important we fill the cityaypo in the or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    new( (void* ) LripHypol i ] ) ZipHypothesis( test( ( ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ziphypo.makeRoom( k );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       >
                                                                                                                                                                              // Clean up city hypotheses and zip hypotheses cityHypo.removeAll(); zipHypo.removeAll(); // of type ZipHypoAC (array)
                                                                                                                                                                                                                                                            // Do not use more than 3 top candidates of city choice list if ( cnt > 3 ) cnt = 3;
                                                                                                                                                  ripHypo.makeRoom(1);
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       assert( sipHypo( i ].hasIntegrity() );
                                                                                                      Page 13 of 29
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3133 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   so of type 21pHypoAC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     es ty top
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              er recog, zips( i ), zipResult ) );
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ) // for ( cnt == 3)
                                                                                                                                                                                                                                                                                                                                                                                                                      // zipHypothesis zh • 0;
                                                                                                                                                                                                                                                                   // Discrete recognition in in tapState words in there
// the words in this state are the 5 digit built phrases,
if( recog->recog() == 0 )
                                                                                                                                                                                                                                                                                                                                                                                  UttChannel *chan = recog.>getChannel();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // initialize new choice tist for rips
new( &(zipHypo(0)) ) ZipHypothesis( recog, zipResult );
                                                                                                                                                                                                                                                                                                                                                recog->setCharmel( &ziputt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for (int icity=0; icity < cnt; **icity )
 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // choices
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Get zipe for city name; and return city name
ch->cityName = sz->cityToZips( buf, &zips );
ch->zh = 0;
ch->zz = sz;
ch->zipAgreesWithState = 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Get icity-th choice from city choice list
cityUtt.resultName( buf, sizeof(buf), icity );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CityHypothesis* ch = &( cityHypo( icity 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // watch out for canceladdress...
// FIX LATER
                                                                                                                                                                                                               // Get the number of choices
cnt= zipUtt.resultCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // build new choice list for the zips found for the 3 ci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              zips.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int imex = zipa.count();
                                                                                                                                                                               if( cnt > 1 )
                                                                                                 WPP.0PP 7-22-95 11:360
                                                                                                                                         SD_WORD w = zipUtt.resultId();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for( int i=0; i < imax; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int i0 = zipHypo.makeRoom( imax );
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2h->ch = ch;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // th is ziphypothesis; ch == cityhypoth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Build a new zip choice list ziphypo (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    //ossert( zh->hosIntegrity() );
20
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bool DigWin::isCertain( SD_WORD testWord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // clean up temp state recog->deleteState( tmpState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->setState( (SD_STATE )0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recog->setVoc( cityVoc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if ( testWord == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return( zh l= 0 ? zh->ch : 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                        if( 0 == recog->recog() )
                                                                                                                                                                                                                                                                                                                                                              if( wordloCompareWith is testword $4 wordloCompareWith is 0 )
                                                                                                                                                                                                                                                                                                                                                                                                    SD_WORD wordToCompareWith a.recog->resultId();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // clean up 
zipHypo.cleanUpNewNords( recog );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog->setChannel( chan );
   35
                                                                                                                                                                                                                                                                                                                          SD_STATE at a recog->LetState( testState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) // if( cnt == 1)
                                                                                                                                                                             recog->addWord( word!oCompereWith );
recog->addWord( testWord );
                                                                                                                                             recog->recog();
                                                                                                                                                                                                                                   essert( st I= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            *foundDistance * ziputt.resultDistance( i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w = zipUtt.resultId( i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // there is a match of SD_uORD id's int is a (w as liphypo(0).wordid);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for( i=0; l<cnt; ++i )
                                                                                               Page 14 of 29
                                                                                                                                                                                                                                                                       return 0;
     40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( ziphypol i 1.wordld == w )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // get zipHypothesis from zipHyp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            th a G(ziphypot 1 1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            zh->ch->zh • zh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // open tecognition
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bool Digwin::isCancelBadLabelGoToSteept NUMD hwnd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                  CustomCitySt test( 0, "", recog->resultId(), 0 );
                                                                                                                                                                                                                                                                                                                                                                                                 CustomCitySt* found = zipCommendWordsHS.find( litest );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return 0;
                                                                                                                                                                                                                                                                                                                                                                  if ( found to 0 & found-visControlWord & isCertain( test.wordId ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( recog->resultId() am testWord && recog->confidence() > 85 )
(
                                                                                                                                           // zip and city do not make sense, reset to ZIP_STATE
else if( test.wordld == badtabelWord )
                                                                                                                                                                                                                                                                                               // wrong answer, reset to ZIP STATE if( test.wordId == cancelWord)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog->resultName( buf, sizeof(.buf ) );
recog->setPrompt( buf );
recog->adapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( testWord == newfoundlandSt.wordId )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog->deleteWard( wordloCampareWith );
recog->deleteWord( testWord );
10
                                                                                                     appState - ZIP_SIATE;
                                                                                                                                                                                                                                                               recog->beep( "bed.wav" );
                                                                                       WVP.CPP 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog->setState( "digits" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int dist = recog->resultDistance();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recog->deleteMord( testWord );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->recog();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( dist |= -1 )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rocog->addword( testWord );
 15
20
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         outCommPort( lastZipOutCommPort, lastStateOutCommPort, lastCityOutCommPort );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          => tCityOutCommPort );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            *> siStateOutCommPort )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as eping" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               => ZipOutCommPort );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #> (abel* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ebel");
 30
                                                                                                                                                                                                                                                                                                                                                                         // Nothing found else
                                                                                                                                                                                                                                                                                SetWindowText( GetDigitem( hund, REC_CITY_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                 SetWindowlext( GetDigitem( hund, REC_STATE_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                          )// it (found)
                                                                                                                                                                                                                                   // Clean up recog->killUtt();
                                                                                                                                                                                                  return 1;
                                                                                                                                                                                                                                                                                                                                                          return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // correct
else if( test.wordid ** same2ipHord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Fell through
else if( test.wordId != wakeUpWord )
   return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Command word: Go to Sleep
else if( test.wordId == goToSleepWord )
/
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SetWindowlext( GetDigitem( hand, REC_CITY_TEXT_ID ), las
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SetWindowText( GetD1gittem( hund, REC_ZIP_TEXT_ID ), last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowlext( GetDigitem( hund, REC_STATE_TEXT_ID ), la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          outCommPort( ltoZip( backabelSt.zip ), "Backabel", "Back
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SetWindowText( GetDigitem( hund, REC_ZIP_IEXT_ID ), "Sie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             numerrors ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recog->beep( "sleeping.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recog->hillutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        appState = ZIP_STATE; ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   appState = WAKEUP_STATE;
                                                                                   Page 15 of 29
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```

```
bool OlgHin::isCancelBadLabelGoToSleepOrProvince( MNND hund )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>т</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // send out answer
outCommPort( lastZipOutCommPort, lastStateOutCom
** #Port, lastCityOutCommPort );
                                                                                                                                                                                                                                                                                                                                                   as D ), lestCityOutCommPort );
                                                                                                                                                                                                                                                                                                                                                                                            ** ID ), lastStateOutCommPort );
                                                                                                                                                                                                                                                                                                                                                                                                                                 ), last21pOutCommPort );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ), "BadLabel" );
5
                                                                                                                                 ), "Steeping" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CustomCitySt* found = zipCommandNordsNS.findt Atest );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CustomCitySt test( 0, "", recog->resultid(), 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "BadLabel" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ill found in 0 && iscertaint test, wordld > >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    it ( found -> iscantrol word )
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            else if( test.wordld == same2ipHord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // When a package keeps on being rejected, the
if person says "Bad Label", which will send to package
if to a special place for address inspection
else if (test.wordid == badLabelWord)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Command word == CANCEL
if( test.wordId == cancelWord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Command word == entuer makes no sent
                                                                                                                                                                                            // Commend word as Go to Sleep else if( test.wordid as goloSleepWord )
                                                                                                         WAPP.CFF 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recog->beep( "bad.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        outCommPort( itoZip( backabelSL.zip ), "Backabel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SetWindowText( GetDigitem( hund, REC_ZIP_IEXI_ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     appState . ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                         SetWindowText( GetDigitem( hund, REC_CITY_TEXT_I
                                                                                                                                                                                                                                                                                                                                                                                                                SetWindowText( GetDigitem( hwnd, REC_STATE_TEXT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetWindowText( GetDigitem( hund, REC_21P_TEXT_ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               makerors:
                                                                                                                                                     SetWindowlext( GetOlgltem( hund, REC_21P_1EX1_1D
                                                                                                                                                                                                                                                                              return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AppState . 21P_SIATE;
                                                                                                                                                                                                                                                                                                                   recog->killutt();
15
20
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void DlgVin::itsBad( MAND hund, UttChannel* toNe )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e> d->name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                             :
::
                                                                                                                                                                                                                                                                            e> ion* );
                                                                                                                                                                                                                   .
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       else
                                                                                                                                                                                                                                                                                                                                                              // the zip state recognition failed.
else
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) // if( found i= 0 lb istertaint test.wordid ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetWindowlext( GetDigitem( hund, REC_CITY_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recog->killutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SetWindowlest( GetDlgfrem( hund, REC_STATE_TEXT_ID ), *** );
                                                                                                                                                     SetWindowlext( GetDigitem( hand, REC_STATE_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // the city recognition ran into a problem if( tolle == &cityUtt & IfixError )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return 0;
                                                                                                                                                                                                                                                                                             SetWindowlext( GetBlgitem( hund, REC_ZIP_IEXT_ID ), "no recognit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowText( GetOlgitem( hund, REC_ZIP_TEXT_ID ), "Backabel"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       outCommPort( !tolip( badLabelSL.zip ), "BadLabel", "BadLabel" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   materiors..;
                                                                                                                                                                                                                                     //Stijn suggests: bad counter can be set and brought to screen h
                                                                                                                                                                                                                                                                                                                                          recog->beep( "bad.wav" );
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // its a province... ship it...
// No further info about cities is needed.
outCommPort( !toZip( found->zip ), found->name,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SetWindowText( GetDigitem( hund, REC_ZIP_TEXT_ID ), foun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     appState = WAKEUP_SIATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog->beep( "steeping.wav" );
                                                                                                         7- 16 of 29
      40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Pure" )
```

```
void DigWin::itsGoodAdapt( CityMypotheels& ch ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10 tes (0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        m> ? orangePrefix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P : 0 ) );
                                                                                                                SetWindowText( GetDigitem( hWnd, REC_CITY_TEXT_10 ), ch.cityName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // lets adapt...
recog-setYoo( city/oc );
recog-setPrompt( d.city/imm );
recog-setPrompt( ch.city/imm );
recog-sadapt();
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              choiceListStats.recordResult( zh->zipStateName() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2ipHypothesis* zh = ch.zh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               appState = ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( zh->zipSteteName() != zh->apelling )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog.>giveAwayUtt( toMe );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetWindowlest( GetDigitem( hund, REC_CITY_TEXT_10 ). ""
                                                                                                                                                                                                                            *(zh->zipStateHame() + 5) + '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tale->setPrompt( "" );
                                                                                                                                                              SetVindowTest( GetDigitem( hWnd, REC_STATE_TEXT_ID ), zh->spelling );
SetWindowTest( GetDigitem( hWnd, REC_STATE_TEXT_ID ), ch.az->stateHame()
                                                                                                                                                                                                                                                                      recog->setChannel( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                   if( ch.zipAgreesWithState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( zh->hasintegrity() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              strncpy( s . 2, sh >zipSteteName(), 3 );
                                                                                                                                                                                                                                                                                                                                  recog.>setVoc( digitsVoc );
recog.>setCharmel( &ripUtt );
recog.>setPrompt( th.>phrase );
recog.>contAdapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  outCommPort( th->spelling, ch.st->stateManme(), ch.cityManme );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 outCommPort( s, ch.sz->stateMome(), ch.cityMame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( s 1= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cher "s = ( th->spelling( 0 ) == 'b'
10
                                                                                                 WAP.CPP 7-22-95 11:36a
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20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 bluePrefix
: ( zh->spelling
  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void DigMin::onSpeech( HMND hund, SD_CHANNEL ch )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         onSpeech is the heart of the solution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // get the utterance handle; do not wait for the end of the
// utterance since the recognition, can proceed in parallel
// with the utterance collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             static int count = 0;
if( count++ == 4 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             essert( recog );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           appState = ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // notify the dragopp classes for speech event if ( recog-ynotifyCharnel( ch, SD_CHANNEL_SIART ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cher rum( 20 );
(toot write( writeCount )=computeMemoryUse(), rum, 10 );
SetWindowText( GetDigitem( hWnd, NEMORY_TEXT_ID ), rum );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            count = 0;
static writeCount = 0;
static long write( 4 );
                                                                                                                                                                                                                                                                                            // appState is initialized to ZIP_SIATE switch( appState )
                                                                                                                                                                                                                                                                                                                                                                                               // reset list box content SendDigiterMessage( hand, CMOICE_LIST_ID, LB_RESETCOMTENT, D, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( ++uriteCount == 4 )
                                                                                                                                                                                                                                                    case ZIP_SIAIE:
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   writeCount = 0;
file * fout = fopen(."memuse.log", "a*"
if( fout )
                                                                                              ripResult.spailing[ 0 ] = '\0';
ripResult.phrase[ 0 ] = '\0';
Page 17 of 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fprintf( fout, "Xld\n", write[ 0 )
fprintf( fout, "Xld\n", write[ 1 ]
fprintf( fout, "Xld\n", write[ 2 ]
fprintf( fout, "Xld\n", write[ 2 ]
fclose( fout );
                                                                                                                                                                                    // reset variables to MALL and // remove hypotheses from previous looping
        40
           45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ***
        50
```

5	£	returned by recog(). Mowever	as d parameter which refers	-> copies it into	=> nto the channel for the	so we speech, the teach	then the word comes	es hat goes with the acoustics.	ex class charmel. The charmel	-	* * * * * * * * * * * * * * * * * * *	=> massachusetts#	-	22 not have spaces between the	so g, which is turned into a			s> {y.	as te pant.	**			٠		; e ;	* 10 ), "" );	2> ), "" );			
15	WUPP.DPP 7-22-95 11:36e	lever for continuous speech there is only one		single cole where This function has a 3r	the function recog-vresuitname() tooks	is what the recognizer thinks it is.	from a list file. When the channel is ti	ics. When the channel is a file ( ==		The class recog has knowledge about the	stateSpelling "m	3	pelling		sinstatespelling, zipstatespelling does	nswer is	This the format the recognizer white 0 1 9 1 3 massachusetts"	Get the result and analyse its plausibli	Stage 1: Recognition of tip code and sta	,		<pre>// start recognition if( 0 == recog-&gt;contRecog() )</pre>	recog->setState( "digitOcolor" );		// Gat digit yocabulary	SetWindowText( GetDigitem( hwnd, REC_CITY_IEXI_I	SetWindowText( GetDlgltent hund, REC_STATE_TEXT_	<pre>setWindowText( GetDigitemt hand, REC_ZIP_IEXI_IO</pre>	int wasGoodZipPhrase = U;	
25		re is only one	ropolition list   42	ection has a 3r	(name() tooks t	inks it is.	channel is ti	( as script)	-		"massachusetts"	-	"blue 0 1 9 1 3	 :	Spelling does	stored as a phraseSpellin	returns:		p code and sta i as					• •		CCCITY_IENT_I	:	C_21P_1ENT_10		as ite
35			•••••									** (eHame(), 5 );		ase();				less than 5,		•	as cover from this error	sy state name. Sometimes		recognized words.			eof( zipResult.phrase ) );	/	ABOLY MAN 4. 1	<pre>#&gt; item on the list. #&gt; urn many more.)</pre>
40 45	Page 18 of 29	// A: PREPARATION:			Stage 2: re-recognition stage against single word compands	/•			choicelistStats.setOperMecResult( digitS	// copy digit string into ChoicelistStat	digitSpelling[ 5 ] = '\0';	strncpy( digitspetting,	// Copy digits, not the state name		wasGoodZipPhrase * zipResult.initfromPhr			if masGoodZipPhrase, of type integer, me consider it not worth pursuing.		Kinds of misrecognition: 1. a deletion error in the digite,	in the function buildlypothesis().	5 words were returned. We will try to re	The correct number is 6: 5 digits and a	A good recognition returns 5 or 6 words	zipResults.initfromhrage returns number	/• ····································		recon-vesuitHamed simbounit cheese air		(The discrete recognizer can ret
50 55		Mr. Company	<del>. دی د</del>		sinst single				echesuite digits	o ChoicelistStat	• <del>•</del> •		state name		sult.initfromPhr			pursuing.	•	he digite,	otherist).	will try to re	5 digits and s	ne S or 6 words.	e returne number				0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ognizer can ret

						<del></del>	<del>-</del>		
*> ( "brinsh	* (e" );	<pre>*&gt; rdid( "wakeup" );  *&gt; wordid( "samezip" );</pre>	** ** ** ** ** ** ** ** ** ** ** ** **	#>d	as will need a		** ized to 0.	*) orosleep,	*> on *> differently, *> ge.
( "britishcolumbia" ); ሠቃዎ, ውን		eup"); amezip");	<pre>-&gt;wordid( "bediabel" ); og.&gt;wordid( "gotosleep" );</pre>	<pre>s&gt; cag.swordid( "cancel address" ); s&gt; };</pre>	t commands, such as Wake Up, will need all the time.		) ii	// crecel etc) // crecel etc)	
britishColum sipCommand/o 7-22-95 11:36a	tipCommend etbertaSt.	uskeUpilord zipCommand sameZipulor zipCommand	bedt abei Vo z i pCommand goToSleepU z i pCommand		Get word I and specia These 10's	// le used tentitate	// cancelWord is of	// Open the voc with a recog-seatVoc( cityVoc // Go to the state with recog-seatState( "zipcr	ormands and pr
blaSt.wordId = rdsHS.add( &bri	<pre>####################################</pre>	wakeUpSdord = wakeUpSL.wordId * recog.vwo # ipCommandWord#NS.edd( &wakeUpSL ); # sameZipWord * # sameZipSL.wordId * recog.v # ipCommandWord#NS.edd( &# sameZipSL );	bedtabelWord * bedtabelSt.wordId = recog zipCommandWordsHS.add( &bedtabelSt ); goToSleepWord = goToSleepSt.wordId * rec zipCommandWordsHS.add( &goToSleepSt );	cencelWord = cancelAddressSl.wordid = re ripCommandWordsNS.add( &cancelAddressSl	Get word ID's (type SD_MORD) of importan and special states, such as alberta, we these ID's are global.	// la used somewhere in function isCerta testState = recog-ygelState( "testCertai")*	<pre>// cancelWord is of type SD_WORD. It was initial if( cancelWord == 0 )</pre>	<pre>// Open the voc with all the city names recog-&gt;setVoc( cityVoc ); // Go to the state with all the command words( g recog-&gt;setState( "zipcommandwords" );</pre>	// commands and provinces, which are dealt with // since they do not have a city recognition sta
recog->wordid	cost ); rdid( "alber	Upst ); lid = recog·> lipst ); lipst );	<pre>abelSt ); wordId = rec wordId = rec sieepSt );</pre>	.wordid = re	of importan	ntestCertai	was initial	umes  aand words( g	dealt with
-	*> t based on	*> "yukonterritory" );  *> );	e> " );  ** sasketchewan"  ** ;	<ul> <li>a) dld( "princeedwardisland"</li> <li>a) ndSl );</li> </ul>	av iou );	=> ordid( "north	=> newfoundland"	a> toba" );  *> neubrunswick"	*> @dor" );
• <u>5</u> 553	2 22 2		<del></del>	dwardisland");		<pre>s&gt; ardid( "northwesiterritories" s&gt; riesSt );</pre>	×	::	
/ Value of wasco / It is probably ft wasCood/ipPhr Page 19 of 29	// 5: Build Conti // The contiecog // one choice. W // a confusabilit		quebecSL z ipComas saskatchi z ipComas	prince£d zipComa	zipComa ontarioS	. <del>.</del>	neuf ound z i pCompa	z i pComa neuBruns z i pComa	labrador zipComma
odlipPhrase nee / always true. /ase )	offecog Choice list.  So only returns  So will generate so  lity matrix, designe	ntoryst.wordid	quebecSl.wordid = recog->wordid( "q zipCommanchlordsHS.add( &quebecSl ); saskatchewanSl.wordid = recog->word zipCommanchlordsHS.add( &saskatchewa	wardislandSt.wor ndwords#S.add( #	novaScotia\$L.wordId = recog:>wordId( zipCommandWordsWS.add( &nova\$cotia\$L ontario\$L.wordId = recog:>wordId( #op zipCommandWordsWS.add( &optario\$L ):	tlerritoriesSL.	landSt.wordId = ndWordsHS.add(	<pre>manchordsH5.edd( &amp;manitobaSt ); nswickSt.wordId = recog-&gt;wordId newCdordsH5.edd( &amp;pmdrumewickS</pre>	labradorSL.wordid = recog-awordid( "L ZipCommandWordsHS.add( &labradorSL );
// Value of ussCoodZipPhrase needs to be 5 or 6. // It is probably always true. if( ussCoodZipPhrase ) Page 19 of 29	// 8: Build Contracog Choice List. // The contracog only returns // one choice. We wilt generate some alternative // a confusability matrix, designed for the digit	yukonTerritorySt.wordId * recog->wordId( zipCommandWordsHS.edd( &yukonTerritorySt	<pre>quebecSl.wordid = recog-&gt;wordid( "quebec zipCommandWordsNS.edd( &amp;quebecSl ); saskatchewanSl.wordid = recog-&gt;wordid( " zipCommandWordsNS.edd( &amp;saskatchewanSl )</pre>	princeEdwardislandSL.wordid = recog.vworzipCommandWordsHS.add( AprinceEdwardIsla	novašcotiašl.wordid = recog->wordid( Pno zipCommandvordsH5.add( Anovašcotiašl ); ontariošl.wordid = recog->wordid( Pontar zipCommandwordsH5.add( Aontariošl );	northWestlerritoriesSt.wordid = recog->u zipCommandWordsHS.edd( AnorthWestlerrito	newfoundlandSt.wordid = recog->wordid( = ripCompandwordsHS.add( EnewfoundlandSt.)	zipCommanderdsHS.edd( &menitobast ); newBrunswickSt.wordId = recog-wordId( = zipCommanderdsHS.wordId = recog-wordId( = zipCommanderdsHS.edd( &ppeBrunswickSt.)	labradorSt.wordid = recog-awordidt "tabr zipCommandWordsWS.add( &labradorSt );
Tables CAN			<del></del>						

																	-			
5		er e building from	.> _tisi_to, te_adosiring, 0, (OMORD )buf );	so but ), i );			\$ 3	so d, standard feature	as ses stored in	;	•		** rection could be made, else	as & LaipHypo class is now	as own SD_WORD ad added to	~	es or 6 likely words.	as disphrase is passed as reor correction	so k decoder, Look at	
10	WP.CPP		DOSTRING, O, C			0.7	-	•		2 2	*	pResult, wasGo	e made, else	16 70	added to	ist of	ds.	# sed	=	
15	3P 7-22-95 11:36e	// clean up			for ( int i a	if( recog->recog() == 0	//	// in the speech queue. A choice list is returne // for discrete recognition. // We are still in commandWordState for recognit	// zipMypo to get the best recognition results a	// C: RE-RECOGNIZE against phrases. // Discrete recognition is used against the phra	//	wasGoodZipPhrase = buildHypothesist reco g, &zipHypo, tipResult, wasGoodZipPhrase );	// The return val // 5 is returned. //	// fitted wit	// phrase, th	// As a resul	// technique	// so that we	// buildhypot	// HINDIN
20	_	// clean up the new words added by phras	SendDigitemHessage(hund, CHOICE	recog->resultName( buf, sizeof(	<pre>for( int i * 0; i &lt; recog-&gt;resultCount() for( int i * 0; i &lt; recog-&gt;resultCount()</pre>	0 >		ue. A choice list is returne gnition. commandwordState for recognit	best recognition	painst phrases. ion is used again		rase = buildHypot	ue 18 6 1	// filled with 40 zips and the state name	// phrase, there are 40 of them, has its	// As a result of this function we will // phrases containing the zip hypothesis	// technique to make an educated guess i	// so that we know whether to apply an e	// buildHypothesis. The parameter wasGoo	Important
25		ided by phras	hund, CHOICE	ut, sizeot(	esultCount()		:	t is returne for recognit	on results a	nst the phra	-	thesist reco	t an error cor	re state page	em, has its	on we will hypothesis	red guess r	apply an e	eter MasGoo	
30		•	÷	as TATE we will	as ad of later, when we are i			_	=> channel If n	** REC_ZIP_TEXT.		and state	e> te like alberta			as he answer.	a) do not trust	** rned choice list, built up		=> (hem)
35	29			TATE we will continue working	ad of later, when we are in	make guesses about the city we		·	channel If not moved or killed, the	REC_ZIP_TEXT_ID ), digntSpelling ); REC_SIATE_TEXT_ID ), zipResult.stateName			:			certain	Our	st, built up	•	
40	Page 23 o					A			ž Š	t.state	_	·e	~ 2: :	_	~=	: :	: =	8.	<b>&gt;</b> ;	<u> </u>
	80 es	->	Or	 >>		55° 5'				Ω.		) // bingo: etse if( )	// Remember	· ·	eddre:	about a	- C	in decr	class r	// the zip // z)pHypo zipHypo.cl
45		if cityHypo.count())	buildCityHypothesis();	// with this information.	// to do this computation, inste // the CHY_STATE. In the CHY_S	// Use the zip and state info to // might expect to be said. // we do this now since we could	O: BUILD NORE II	// charmel will keep giving the recog-spiveAwayUtt( &riputt );	// Nove this utt into the zigutt	SetWindowText( GetOlgitem( hund, );	SetWindowlext( GetDigitem( hund,	break; ) // bingo: display our best guess for sip else if( wasGoodZipPhrase ** 6 )	// It is a command word or a special sta // Remember we are in the commandState etae if( isCancelBadLabelGoloSleepDrProv etae	break;	<pre>if( addressConfidence &lt; 4 ) {     itsBad( band &amp; sidl)</pre>	// about what it found, We will reject t	// If the confidence is lower than 4, we	// in decressing confidence order. addressConfidence = recog-rconfidence();	// class recognizer knows about the retu	// the zipCommendState (and Voc) (delete // ZipNypo still knows about the choices zipNypo_clearibuseAbords (recog );
50		city hypotheses		metios.	In the CITY_S	be said. since we could	IYPO's.	te faigure );	into the zigutt	Olgitem( hund,	Digitem hand.	guess for zip	commendState	:		will reject t	wer than 4, we	re order. reanfidence();	about the retu	Id Voc) (delete ut the choices
55			<del></del>												•					

## EP 0 762 385 A2

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e> ityHypo class.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            => et the SD_WORD id's for each city
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ** ); i--; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                so all state with name of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
2h;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            as ties with those lips
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1> IAIE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ** ** ** pelling, th-**sloteName(), **pureState* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as re && ch->sz->ssPure() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         es ity() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                *> STATE, to do recognition on the cities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22 insuers for the rip and state
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ** rdld * recog->wordldt cityHypot i ).cityHume );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          *> it.stateName() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 11 0 10d/Hypol 0 1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             be moved into a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             this directly? lake top
         5
       10
                                                                                                                                      WAP.CPP 7-22-95 11:36a
                                                                                                                                                                                         // clean up 
ziphypo.cleanUphewlords( recog );
                                                                                                                                                                                                                                          // else recog failed!!!
                                                                                                                                                          itsBod( hund, &ripUtt );
                                                                                                                                                                                                                                                                                               break;
                                                                                                                                                                                                                                                                                                                               itsBad( hund, Bziputt );
         15
                                                                                                                                                                                                                                                                                                                                                                                                 break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // assert( zh->hasInteg/
                                                                                                                                                                                                                                                                                                                                                                                                                                 appState = CITY_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // set appState to CITY_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // later this info will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // and put them in the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // recognized state to g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // set recognizer to vox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           iff ch->zipAgreesWithSte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZipHypothesis* zh = ch->
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CityHypothesis* ch = &(c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // We have a number of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for( i = cityHypo.count(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recog->setState( ZipResu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // 6 zips and get the ci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // tmpState, can't we do
       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        breek;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cityHypo( 1 ].wo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            outCommont( zh-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         appState = 21P_S
       25
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                                                                                                                                                                                                                           se gainst
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          above. How we will
         30
           35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ) // case ZIP_STATE break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // The next step will have 2 discrete recognition steps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // speech is heard we will be in the state CITY_STATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // for a new message from the FEP for speech. The next t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Now we are out of the message loop. Our app is waitin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Create a new state SD_STATE tapState = recog->newState ( "tapsity" )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int i = ( 0 == recog->recog() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // ZIP_SIATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // against is the "StateMame" state, eat at the
                                                                                                                                                                        // from logical puesses in ZIP_STATE, and with c
                                                                                                                                                                                                        // the tapState, which is filled up with city ru
                                                                                                                                                                                                                                            // Second discrete recognition on city utt
// Second discrete recognition, but now a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // First discrete recognition step: The state we
                                                                                                                                                                                                                                                                                                                                                                                                                                                // be adding the SD_WDRD id's to the tmpState.
for( i = cityMypo.count(); i--; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // We already built some hypo's in the ZIP_STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Put the choice list of cities in tapState if( i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // recognition worked (i = ( 0 == recog->recog()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // DebugOutput( DBF_ERROR, "Just a Test" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Point to impCity state ; recog-vactState( impState );
                                                                                                                          Page 21 of 29
             40
                                                                                                                                                                                                                                                                                                                                                                                                              SD_ucke w = cityHypo( i ).wordld;
                                                                                                                                                                                                                                                                                                                                                               if( w i= 0 )
// add the city ID's from cityMy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for( i = 0; i < recog->resultCount(); ++
                                                                                                                                                                                                                                                                                                                               recog->addWord( w );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog-vaddword( recog->resultid(
             45
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es
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "> _LIST_10, LB_ADDSTRING, 0, (DWORD )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      => Integrity();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      as count(); **f )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ate" SIAIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   => 1 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   av isCancel...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ** buf ), i );
                                                                                                                                                                                                                                         e> (1d( i ) );
5
10
                                                                                                      WAPP.COP 7-22-95 11:364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // found by discrete recognition against the "st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( 0 == recog->recog() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // in the city VOC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for( i = 0; i < recog->resultCount(); **
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Put the chaice list of cities on scre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // cleanup first...
recog->deleteState( tmpState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            addressConfidence = recog->confidence();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // if it is a command word, perform comm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // otherwise we blow away the choice lis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Move the utt in the channel to cityUt
15
                                                                                                                                                                                               for( i=0; i*cnt; **i )
(
                                                                                                                                                                                                                                                                                                                                                              // Clean up previous ID's cityResultids.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                              // declare new erray of SD_WORD static AC< SD_WORD > cityResultIds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // the tapState recognition recog-reliveAuayUtt( acityUtt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Move the utt now, before we check for
                                                                                                                                                                                                                                                                                                               // no more than 20 are kept around
int cnt * cityUtt.resultCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( isCancelBadLabelGoToSleep( hund ) )
                                                                                                                                                                                                                                                             for( i=0; i < cnt; ++i )
cityResultIds.add( cityUtt.resul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      breek;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SendDigitemMessage( hwnd, CHOICE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // get city name
recog->resultHame( buf, sizeof(
                                                                                                                                                                           for( int j=cityMypo.count(); j--
                                                                                                                            // A good answer
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for( i=0; i<zipHypo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              zipHypo( i ).has
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ar e control flow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     as one city
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    => == cityResultIds[ i ] )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          es ity's zips ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  => tyHypo( j ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       av istance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ** :: :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as bout the zipHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as r heavy duty one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as e sense
                                                                                                                                                                                                                                                                 a) ated guesses
                                                                                                                                                                       ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       zip state city
   30
     35
                                                                                                                                                                                                                               // about city recognition recognition to recognition the recognition of the recognition (recognition);
                                                                                                                                                                                                                                                                          // cleanup temp state that contains all the educ
                                                                                                                                                                                 // no recognition...
itsBad( hand, &cityUtt );
                                                                                                      Page 22 of 29
       40
                                                                                                                                                                                                                                                                                                                   break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( 0 )= (ch-rerecoglipt &foundDistance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Please look there as well,
// returns city hypothesia which knows a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int foundDistance;
CityHypothesis* ch;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // try-rerecognizing zip with the best c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // if we got here things didn't match up
                                                                                                                                                                                                                                                                                                                                                     // else its Wrong...
itsBad( hand, &cityUtt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // re:recognize: This function is anothe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . if( addressConfidence = 0 )
addressConfidence = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // the confidence is good.
// In this case, the city was
if( addressConfidence > 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // the first choice does not mak
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             addressConfidence = 100 - foundD
                                                                                                                                                                                                                                                                                                                                                                                                                                       break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( cityHypot j ].wordId
         45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // everything matches...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          itsGoodAdapt( *ch );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // The end of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // zip matches s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 goto EndOfSwitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      itsGoodldapt( ci
         50
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void DlgWin::onSysCommand( NAMD hwnd, UINT cmd, int, int )
(
                                                                                                                                                                                                                                    void Olgvin::onCommand( MAND hund, UINI cmd, KUND, UINI )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EndOfSwitch:
                                                                                                                                                                                                                                                                               // function that organizes the user interface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // we always get to this end switch
SetWindowlext( GetDiglicem( hund, COMFIDENCE_TEXT_ID ), itoa( add ** ressConfidence, buf, 10 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SetWindowlext( GetOlgitem( hund, PROMPT_TEXT_ID ), sayPrompt[ ap rs pState 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *> Y_IEX1_IO ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               => 16_16X1_10 ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "> _!EXI_10 ), "Awake" );
 5
                                                                                                                                                                                                                                                                                                                                                                                                                            switch( cmd )
                                                                                                                                                                                                             switch ( cmd )
                                                                                                                                                                Case CHOICE LIST_ID:
break;
                                                                                                                                                                                                                                                                                                                                                           rase USR_CUMBO_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // In case there is still another utterance, but we have no star
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // utterance message, put a start message in the queue.
if( recog->peebUtt() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COSP WAKEUP_STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          postSpeechEvent( (SD_CHANNEL )1, SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // We are sleeping, and expecting to wake up.
// Re initialize text on screen.
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        breek;
                                                                                                          WAPP.COP 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( isCertain( wakedpWord ) )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog->tilliutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SetWindowlext( GetDigitem( hund, REC_ZIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SatVindowlext( GetDigitem( hund, REC_CII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SatWindowText( GetDigitem( hund, REC_STA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog-*beep( "awake.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  appState = 219_STATE;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      t> r 7 "fix &Errors" : "Ignore &Errors" );
break;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   case PURGE_BIN_ID:
if( speechlask )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      case FIX_ERRORS_BIM_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          case SAVE BIM_ID:
if{ recog && channel && recog->getUser() }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  break:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SetWindowlest( GetDigitem( hand, FIX_ERRORS_BIN_ID ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fixerror . Ifixerror;
35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MCURSOR hCursor = SetCursor( toadCursor( 0, IDC_WAIT ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recog->saveUser( origCityUser );
cityUser = origCityUser;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( wastistening )
     channel->listen( FALSE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ziputt.killutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   channel -> flush();
                                                                                                                                            speechlask = new Speechlask( name, reportError );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int wastistening = hadtistened && channel-vististening()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int hadlistened . channel in 0 && recog in 0;
                                                                                                                                                                           delete speechlosk;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( hadListened )
                                                                                                                                                                                                                                                             if( recog )
                                                                                                                                                                                                                                                                                                                                                           if channel )
                                                                                                                                                                                                           delete recog; recog = 0;
                                                                                                                                                                                                                                                                                                            delete charmel;
charmel = 0;
                                                                                                                                                                                                                                                                                                                                                                                                        recog->saveUser( tmpCityUsr );
cityUser = tmpCityUsr;
                                                                                                      Page 23 of 29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   言語で
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MessageBox( hwrd, "Could not open either digits.voc or ctall.voc or user file!",
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                                                                                                                                                                                                                                                                                                                                       .; · · );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ** recognizer
                                                                                                                                                                                                       ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                         => ) == 'm';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s> (usrName) ) )
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Case SEJUSEA_BIN_IO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DigWin::name, MB_ICOMEXCLAMATION | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       break:
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      iff iGetDigitemiext( hund, USR_CDMBO_ID, usrName, sizeof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char usrwame( UTT_PROMPT_LENGIN );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                 if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                         bool ighale = tolower( usrName( strten( usrName ) - ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MCURSOR hCursor = SetCursor( LoadCursor( 0, IDC_WAIT ) )
                                                                                                                      WAPP.CPP 7-22-95 11:36a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog = new Recognizer( charmel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   channel = new WindowsLiveChannel();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // class deals with all this charmel-ropen( postSpeechEvent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // handle the callback function to the FEP
// Look in dragopp.cpp for more details how the
                                                                                                                                                                                                                                                                                                                                                           extern int fileNameCmp( const char *, const char
                                                                                                                                                                                                                                                                                       char buffer( 128 );
recog-vgetUsername( buffer, sizeof( buffer ) );
                                                                                                                                                                                                                                                       if( fileNameCmp( usrName, buffer ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Endbialog( hund, 0 );
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog-setuser( cityuser ) == 0 | recog-setvoc( digitsvoc ) == 0 | recog-setvoc( cityvoc ) == 0 )
                                                                                                                                                                                                                          bool wastistening = channel-vististening
                                                                                                                                                          20
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ** n either digits.voc or ctall.voc or user file!",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç
     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Digitin::name, MB_ICONEXCLAMATION | MB_OK );
     35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // recog us 0
                                                                                                                                                                                                         stropy( citydser, usrkame );
                                                                                                                                                                                                                                        recog = new Recognizer( charmel );
                                                                                                                                                                                                                                                                                           // Get the channel
if( Channel == 0 )
    channel = new WindowstiveChannel();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Load male vocabulary
if( intele )
                                                                                                                                                                                                                                                                                                                                                                                                                                         // toad female vocabulary
       40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          digitavoc = melbigitavoc;
cityvoc = melCityvoc;
                                                                                                                                                                                                                                                                                                                                                                               digitaVoc = fembligitaVoc;
cityVoc = femblityVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stropy( cityUser, usrNess );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cityUser = origCityUser;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recog->closeVoc( cityVoc );
recog->closeVoc( digitsVoc );
recog->closeUser( cityUser );
                                                                                                                                             recog-setUser( cityUser ) ## 0 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( wastistening )
     charmet->tisten( IRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          it( ishale )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           digitsVoc = malDigitaVoc;
cityVoc = malCityVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EndDialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         digits/oc = femblgita/oc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog-vaetUser( cityUser ) ** 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->setVoct cityVoc ) ** 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recog->setVoc( digitsVoc ) ** 0
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## EP 0 762 385 A2

5		. Level Listensial (V. Leselon piet (stephino))			as recognististening() ? "AMicrophone On" : "AMicrophone Off" );		;		^;	COSO MICROPHONE BIN ID:	break;	•	•> 10, 0 );		<b>10</b> 0 ):		• );	SETUSER_BTW_ID ), FALSE );	*> D ), TRUE );			** ** **;			; "w", (3		an: Diglin: ca	my digits.voc or cts	
10	40° 40°	Ar tracon. If		Sastinatura.	ng() ? "Unicroc	SetWindowlex	recog->lister	SetWindowlext(		ME BIN ID:		SetCursor( hCursor );	· .	Post	PostM	numë r	Setfo	FALSE );				==	==	:22	2	<b>-</b>	Me, NB_ICONEXC	III.voc or user	•
15	WPP.079 7-22-95 11:36a	iff tracon bid intening() )		Carpial rad	Mone On" : "Uni	( GetDigitemt h	recog->listen( lrecog->isListening() );	HemoryUse(), Fixe ( GetDigitem( h	•			ursor );		essage( hund, W	essage( hund, w	numErrors = 0;	cust GetDigites	COMO		edindoui Getolai	Charmal - yours' marsmarch Event ):	fctor	reco	recos	file	EndDialog( hund, 0 );	Digwin::name, MB_ICONEXCLAMATION   MB_OK );	MessageBox( )	recog. > setVo
20		:		control of the contro	crophone Off");	SetWindowText( GetDigitem( hund, MICROPHONE_BIN_ID ),	tening());	Citer Fund & V.     Clos ( computation for yuse(),   xum, 10 );   SetWindowlest( GetDigitem( hund, MEMONY_TEXT_1D ), rum )					And the state of t	POSTMESSAGE NAMES AND COMMAND START THRESH STORE	PostMessage( hund, LM_COMMAND, WORD_PAUSE_SLIDE_		Setfocust GetDigitem ( hund, NORD_PAUSE_SLIDE_ID	בשפונהאונוססאל הבנהולוננשל נושום		STANDARD CONTRACTOR OF THE PROPERTY OF THE PRO	mechivent ).	fclose( vlistfile );	recog->listState( 50000, vlistfi	recog->setState( (SD_STATE )0 );	file *vlistfile = fopen( "vlist"	and, 0 );	<u>.</u>	MessageBoxt hund, "Could not open either digits.voc or ctall.voc or user file!",	recog->setVoc( cityVoc ) == 0
25	_			<b>-</b>		, 60 ). 		). 74s				- ·- <del>-</del>		HRESH STIDE	30115_350		SC106_10		•			<del></del>	), vlistri	AIE )0 );	"ואויצניי			en either	
30		٠	<b>*</b>	•	** SH SLIDE ID ), SB CTL );	) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	break;	\$ \$ );				a> , (short )wordPause );		<b>*</b> );	*> LIDE_ID ), SB_CIL );	case WORD_PA	break;	<b>~</b>				*> STRING, 0, (DWORD )buf );	e> , (100*predicted)/total );	** STRING, 0, (DWDRD )buf );	=> SIRING, 0, (DUORD )buf );	=> O*right)/total );			EICONTENT, O, O );
35	if( speechlask ) Page 25	off wastistening		bool west istenion a fir	startihresh = G	( Case SIMMI JUNESM_STIDE_ID:	-	SetWindowlext( GetDlg)to	itoat wordPause, num, 10 );	char man( 20 );	if ( wastistening	use );	if( westistening )	bool wastistening = ( r	wordPause = Gett	Case WORD_PAUSE_SLIDE_ID:	••	,	// init	else	xi((limer( hund)						ine inc		
40	hlask ) Page 25 of 29	J	4	5	el Scrol			GetOtgi	3		֪֖֖֖֖	·		3	Scrottp				ialize		er ( )			T emiles	ā	itemkes.			Centres:
<b>15</b>	Fep_Setpar( SUPER_USER, FEP_SIAR	recognisten(0);		recon is 0 ft reconvintintaning()	stertihresh = GeiScroliPos( GetDigitem inmo, SiART_INKt CTL );			tem( hund, womo_PAUSE_[EXI_[0 ), n	10 );		recogivation (1);	specent assessment word, because.	recog->(isten( 0 );	recog != 0 && recog·vististening()	ost Getalgitest numb, woxo_Pause_s				<pre>// initiatize vu meter Setlimer( hund, VUILNER_ID, 20, (TIMERPROC )0 );</pre>	•	rd, WITHER_ID );		Service of the servic	sercing converse per number of the light of the local control of the light of the l	"wrong: Xid Xid\X", wrong, (10	SendbigitenMessage( hand, CMDICE_LIST_ID, LB_ADD		long total = right + wrong;	SendDigitemMessaget hund, CMOICE_tIST_ID, LB_RES

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void Diguin::onfimerOrawVU( NUMD humd, UINT id )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       => rt1hresh );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         e> Thresh );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as FOSPEECHTHRESH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    endibresh • GetScrollPost GetDigitest hund, END_INRESH_S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $
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 5
                                                                                                                                                                                                                                                                                                                                                                                                            if( id == WITHER_ID && channel && channel-visitistening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Case END_INRESH_SLIDE_10:
                                                                                                                                                                                                                                                                                                         Fep_Status( (BOOL* )Stest, &fepinfo );
                                                                                                                                                                                                                                                                                                                                          FEP_S_STATUS tepinto;
                                                                                                                                                                                                                                                                                                                                                                               bool test;
                                                                                                                                                                                                              GetClientRect( hvu, &rc );
                                                                                                                                                                                                                                             RECT rc;
                                                                                                                                                                                                                                                                              HUMB how = GetDigites (hund, VUNETER_10 );
 10
                                                                                                                             rc.left
rc.right
rc.top
rc.bottom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SetWindowlext( GetDigitem( hund, SIARI_IMRESH_TEXT_ID ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cher num (20 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowlext( GetDigitem( hund, EMD_IHRESH_IEXI_ID ), o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cher rum( 20 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( speechlask, )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bool wastistening = ( recog != 0 && recog.>ististening()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            itoa( startThresh, rum, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          itoe( endThresh, rum, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of ( washistening )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if ( westimmening )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if westistening )
                                                                                                         WP.09 7-22-95 11:36e
                                                                                                                             35. 61;
116. 3;
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog->listen( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recognistent 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fep_Setper( SUPER_USER, FEP_ENDO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recog-visten( 1 );
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (MORD ) end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (WORD ) sta
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void DigNin::onDestroy( MAND hund )
(
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Killlimer( hund, VUTINER_10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( speechlask )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               noiseright = speechleft = unit * fepinfo.noise_level;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unit = (rc.right - rc.left) / fepinfo.max_leval;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MDC hdc . GetDC( hvu );
                                                                                                                                                                                                                                                                                                                                                                                                               ziputt.killutt();
cityutt.killutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Background
Rectangle( hdc, speechright, rc.top , rc.right, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DeleteObject( hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SelectObject( hdc, hOldBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rectangle( hdc, speechleft, rc.top, speechright, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             holdBrush = (KBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // draw speech
hBrush = CreateSolidBrush( RGB( 0, 255, 0 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DeleteObject(hBrush);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SelectObject( hdc, hOldBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rectangle( hdc, rc.left, rc.top, noiseright, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HBRUSH holdBrush = (MBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // draw speech
MBRUSH hBrush = CreateSolidBrush( RGB( 255, 0, 0 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                speechright = unit + fepinfo.speech_level + speechleft;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int noiseright, speechleft, speechright, unit;
                                                                                                                             delete speechlask;
speechlask = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ReleaseOC( hvu, hdc );
                                                                                                                                                                                                                                                                                                                                                                                iff channel )
                                                                                                                                                                                                                                                                              if( recog )
                                                                                                                                                                                                                              delete recog; recog * 0;
     35
                                                                                                                                                                                                                                                                                                                               delete channel;
channel = 0;
                                                                                                                                                                                            choiceListStats.printStats();
                                                                                                        2000
       40
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```

```
BOOL FAR PASCAL export DigMin::undProc( MAMD hard, UINT message, MPARAM wParam, v LPARAM (Param )
                                                                                                                                                                                                      class Applin
                                                                                                                                                                                                                                                  // Purpose : application driven from this class
// WirMain will call wcdProc of Appuin
                                                                                                                                                                                                                                                                                                                                                                                   // CLASS Appliin
                                                                                                                                                                                                                                                                                                                                                                                                                             handleHessage( UM_COMM_SEMD_SYMC_MSG, hwnd, wParam, iParam, onCo r> mmSendSyncMsg );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          er echang );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 messageHandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return messageMandled 7 returnValue : 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     long returnValue = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for( int 1:0; 1:4; **1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PostQuitMessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       handleHessage( LM_INER, hund, LParam, lParam, onlinerDrauVU );
handleHessage( LM_CHANNELSIARI, hund, LParam, iParam, onSpeech
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    handleMessage( LM_DESTRDY, hund, LParam, IParam, orDestroy );
handleMessage( LM_COMMAND, hund, LParam, IParam, orCommand );
handleMessage( LM_SYSCOMMAND, hund, LParam, (Param, orSysCommand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              handleMessage( UM_COMM_CNECK_MSG, hund, uFaram, iParam, onCommch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               handleHessage( MM_INITOTALOG, hund, wParam, IParam, onInitOialog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               iff comm( i ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           commformat( i ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     delete comm( + );
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   delete commiformat( i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         comm( i ) = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          commoformat( i ) = 0;
                                                                                                                                                     HAPP. CDP 7-22-95 11:364
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25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Static Global variables of Appalin
HAND Appalin: hMnd;
HIASK Appalin: hTask;
Appalin: btask;
bool Appalin: messageHandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ∷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int PASCAL Virwain( HINSTANCE hinst, HINSTANCE hPrevinstance, LPSIR ipazCaddine. ... int /* nCadShow */ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Main function of application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽ QH () );
30
                                                                                                                                                                        MAND hand - CreateWindow( name
                                                                                                                                                                                                                       ::hinstance = hinst; // the global hinstance for the eliderctl
slideControl.libMaininit(); // register the slider class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static const char name!] * "OragCpp";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          static boil orderate( HAND hAnd, CREATESTRUCT FAR* (pcreatestruct ); static void ordertroy( HAND hAnd ); static void orderate( MAND hAnd ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 static HAND hand;
static HIASK hlask;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static long FAR PASCAL _export wndProc( HUND, UINT, WPARAM, LPARAM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SetMessageOueue( 64 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             friend int PASCAL Winmein( HIMSTANCE, MINSTANCE, LPSTE, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static bool messageHandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if (hPrevinstance )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // undProc() services
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         widclass.style
widclass.lp/rumdProc
widclass.cbClaExtra
widclass.cbMndExtra
widclass.hlmstance
                                                                                                                                                                                                                                                                                                                                                      wmdclass.hCursor = toadCursor( 0, IDC_ARROW );
// wmdclass.hCursor = toadCursor( 0, IDC_ARROW );
wmdclass.hbrBackground = 0;
wmdclass.tpszKeruMame = name;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INDCLASS undclass;
                                                                                                                                                                                                                                                                                                                 RegisterClass( &wndclass );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     undelass.hicon
  35
                                                                                                                                                Page 27 of 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                * CS KREDRAW | CS VREDRAW;

* Ajplwin::undbroc;

* 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           * Loadicont O. MAKEINTRESOURCE ( IDI_NY_IC
       40
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```

```
void AppWin::onCommand( MARO hUnd, UINT cmd, KUND, UINT )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Application Helper function
                                                                                                                                                                                                                                                                                                                                                   // create dialog box proc instances for use later atatic fARPROC lpfn = MakeProcInstances (FARPROC )Diguin => ::undProc, hinstance);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . . . . . . . .
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shouldindow( Applin::hand, SM NIDE );
// Shouldindow( hand, ndmdShow );
// UpdateWindow( hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           whitel GetMessagel Arms, 0, 0, 0 ) >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSG msg;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mssert( hund ** Appuint:hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                            switch ( cmd )
                                                                                                                                                                                                                                                                                                                                                                                                                case UM INIT_DIALOG:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return mg. Peran;
                                                                                                                                        default:
messaycHandled = fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TranslateMessage( Lmsg );
DispatchMessage( Lmsg );
                                                                                                                                                                                                                              break ;
10
                                                                                                                                                                                                                                                                                             DistogBox( hinstance, "TestDislog", 0, (DLGPROC )tpin );
                                                                                                                                                                                                                                                                    PostMessage( hund, LM_CLOSE, 0, 0 );
                                                                                                                                                                                                                                                                                                                              secert( lpfn );
                                                                                                 WAPP.CPP 7-22-95 11:364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mar.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (perCard ine );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CH_USEDEFAULT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CM_USEDEFAULT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CA OSEDE LYNTI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CH_USEDEFAULT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WS_OVERLAPPEDWINDOW | WS_CLIPCHILDREN,
15
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25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void Applin::onMCDestroy( MAND )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void Applin::orDestroy( MUND )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bool AppWin::onCreate( HAMD hund, CREATESTRUCT FAR* ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Application Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Application Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                   long FAR PASCAL_export Applin::undProc( NAKD hund, UINT message, UPARAN uParam, av LPARAN (Param )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Application Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Application Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Application message handler called from wirMain function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void Applin::onClose( NUND hand )
                                                                                                                                                                                                                                                                        .
..
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PostOuitMessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DestroyWindow( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hlask = GetCurrentlask();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PostNessage( hand, UM_COMMAND, UM_INIT_BIALOG, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hund . hund;
                                                                                                                                                                                                                                                                                                                                                                                                                    messageHandled * TRUE;
                                                                                                                                                                                                                                                                                                                                                   switch( message )
                                                                                                                                                                                                                                                                                                                                                                                  long returnValue = 0;
                                                                                                                                                                                                                                                                                   handleHessage( LM_CREATE, hand, wParam, (Param, orCreate );
handleHessage( LM_DESTROY, hand, LParam, (Param, orOestroy );
handleHessage( LM_MCDESTROY, hand, LParam, (Param, onMCDestroy )
                                                                                                                                                          break;
                                                                                                                                                                                                                                      handleHessage( LM_CLOSE, hund, LParam, LParam, onClose );
handleHessage( LM_COMMAND, hund, LParam, LParam, onCommand );
                                                                                                                                                                                       messageHandled = fALSE;
   35
                                                                                               Page 28 of 29
     40
       45
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```

5	WPP.				•			·	return( messageHandled r> (Param ) ); )	
15	``````````````````````````````````````								7 returnVatu : DefWindow	
20	•								? returnValue : DetWindowProc( hwnd, message, wParam,	
25	-			 			·		, wParam,	-
30		÷					·			
35	Ĭ								·	
40	Page 29 of 29					<b>.</b>	er Vitaga itt	· de la companya de l	• .	15. j. <u>2</u> 1.,
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50	:   : 7	place (A)				· · · · · ·				
			-							

```
OneShotNeap:: OneShotNeap()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void* OneShotHeap::carveltUpAndGiveltAway( unsigned length )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OneShotHeap::OneShotHeap( unaigned az )
: Seq< MemSt >()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #Include "oneshot.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       start=end=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Author: Greg Godbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copyright (c) 1991-1995 by Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  · · · · · ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                     cher'st = start;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // our own little new...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for( MemSL *mslMext, *msl*first(); msl; msl*mslMext)
                                                                                                                                                                                                                                                                                                                                                                                                                   ill end - at < length )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length ** length & 1;
                                                                                                                              return (void* )st;
                                                                                                                                                             start = st + length;
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 msinext = msi->next();
delete msi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oneshot.cpp application's memory manager. The app knows and controls where to application's memory for altocation. It comes with blocks. Advantage to get rid of altocated accounty and to make the app more robust against memory leaks.
                                                                                                                                                                                                                                                                                                                                                                                     unsigned as = length + sizeof( NemSL ) + ( sizeof( NemSL ) & 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                         st += sizeof( MemSL ) + ( sizeof( MemSL ) & 1 ); // align word boundry
                                                                                                                                                                                                                                                                                        assert( st );
                                                                                                                                                                                                                                                                                                                          st a new charf sz l;
                                                                                                                                                                                                                                                                                                                                                        if( sr < heapChurckSize )
                                                                                                                                                                                                                         addfirst( (MemSt* )st );
                                                                                                                                                                                                                                                           end = 61 + 61;
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          heapChunkSize = ez;
                                                                                                         QMESHOT.CPP 7-22-95 11:24s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // align word boundry (even addresses)
 15
                                                                                                                                                                                                                                                                                                                                                            az = heapChunkSize;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void OneShotNeap::empty()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( mgl == 0 )
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                end = start + heapChunkSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MemSL* msiNext;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Memst = first();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   start ** sizeof( MemSL );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   start = (char* )msl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 while( (mslNext=msl->next()) |= 0 )
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                delete (char* ) msi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               remove( msl );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    asi = mallent;
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#include stidlo.h>
#include stidlib.h>
#include stiring.h>
#include satting.h>
#include satting.h>
#include satting.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Given the phrase, compute where
// start index for 21p is, and index for state is within the phrase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #include "hashest.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int ZipResult::initfromPhrase()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 lipResult:: 2ipResult( 2ipResult& zr )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cher *ph * phrase;
char *spl * spelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                         stateSpellingIndex = -1;
zipStateSpellingIndex = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   memcpy( (void* )this, (void* )&zr, sizeof( ZipResult ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright (c) 1991-1995 by Dragon Systems, Inc.
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                                                                                                                                                                                                                                                                                                                                           for ( int len = 0; *ph !* '\0'; )
                                                                                                                                                                                                                                                                                                                                                                                                                         while ( *ph & lisdigit ( *ph ) )
                                                                                                                                                                                                                                                                                                                                                                                           .told. - .by...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypo.cpp
Module that computes rip hypotheses. Stack decoder algoritm
is implemented in this module.
                                                                                                                                    else if( isspace( *ph ) )

**ph;
                                                                                                                                                                                                                                                                                                             ( ( dq. )) lalpa ) );
                                                                                                                                                                                                                                                           if( zipStateSpellingIndex = *1 )
zipStateSpellingIndex = *pt - *pelling;
                                                                                                                                                                                                                                 ...de . ...
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                                                                                                               NYPO.079 7-22-95 10:24.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Given the spelling, compute where // start index for 21p is, and index for state is within the spelling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int ZipResult::initFramSpelling()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ^ <u>e</u>
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stateSpellingIndex = -1;
zipStateSpellingIndex = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   char *ph = phrase;
char *spl = spelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :10/1 a 108.
                                                                                                                                   while( isspace( *spl ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            while( *spi && lisdigit( *spl ) )
                                                                                                                                                                                                                                                                                                                                                                                                       for( int len + 0; *spl != '\0'; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return( (en );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( stateSpellingIndex == *1 )
    stateSpellingIndex = spl - spelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else
bresk;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                          :..ids. . ..td.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( 0 == strcmp( stateName(), "state" ) )
strcpy( stateName(), stateAliasString );
                                                                                                                                                                                                                                                                                                                                                                       if( isdigit( *spl ) )
                                                                                                                                                                                                                                                                                                                         if( sipStateSpellingIndex = 1 )
zipStateSpellingIndex = spl - spelling;
                                                                                                                                                                                                                                 3
                                                                                                                                                                                                                                                             · ph · · · · ;
                                                                                                                                                                                                                                                                                             contra . sples;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        while( ("spl++ = "ph++) != '\0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        stateSpellingIndex = spl - spelling;
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// convert zip to a string const chare (toZip( long num )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Detete new words, usually phrase built
void 2ipHypoAC::clearUpNewNords( Recognizer* recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ziphypothesis::Ziphypothesis( Ziphypothesis& &r )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // initialize ZipHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stateSpellingIndex = spl - spelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return buf + strient buf ) - 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             static char buf UIT_PROWPT_LENGTH ] . "00000";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return( len );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( zipStateSpellingIndex == .1 )
zipStateSpellingIndex = apl - apelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        memcpy( (void* )this, (void* )&zr, sizeuf( ZipHypothesis ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for( int i=count(); i--; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .0. a wd.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ttoat num, buf+5, 10 );
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strcpy( stateName(), stateNileaString );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog-vdeleteWord( (*this)( i ).wordld );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (*this)( i ].iskewword = 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // 3 parameters: recognizer , the zip and the ZipResult class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZipHypothesis::ZipHypothesis( Recognizer* recug, ZipResult& zr )
; ZipResult( zr )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // initialize ZipHypothesis
// 2 parameters: recognizer , the zip and the ZipResult class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int compareHypothesis( const void* given, const void* test )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 '\text{turn ((Hypothesis* )test)->currentScore - ((Hypothesis* )given)->currentSc
=> ore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // convert digit code to a string
const char *zp = itoZip( mum );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cher *s = phrase + ripStateSpellingIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // copy the zip string into the state name
strncpy( zipStateMame(), zp, 5 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( isNewHord )
wordId = recog->buildWord( spelling, phrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // buildword builds and adds the WDRD_ID to the state iff lameword ) % \left( \frac{1}{2}\right) =\frac{1}{2}\left( \frac{1}{2}\right) \left( \frac{1}{2}\right) \left(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   essert( wordld i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isheward = ( (word!d=recog->word!d( spelling )) == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( wordld to 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              isheword = ( (wordid=recog->wordid( spelling )) == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #i(e( *zp )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // set boolean to 1 if the phrase does not have a word ID yet.
// If this word does not exists yet, most often this is the case,
// create a new model and add it to the state. Look in dragopp.cpp
// for buildword() and addword()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog->addWord( wordId );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recog-vaddWord( wordId );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               wordld = recog->buildWord( speiling, phrase );
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                                                                                                                                                                                                                                                                                          // function that generates new hypotheses and puts them in the 
// priority queue 
void Kypothesis::propagats( PriorityQue:Mypothesis>* hpq, int stateId )
                                                                                                                                                                                                                                                                                                                          // memory manager
OneShotHeap Hypothesis::heap( 4096 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                ::::::::::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // confusability matrix used in the stack decoder int Hypothesis::confusionScore() = (
                                                                                                                   ** (eld ) )
                                                                                                                                                                                                                                       int oldScore a currentScore;
                                                                                                                                                                                                                                                    int currentladex = nextWordIndex++;
                                                                                                                                                                                                                                                                   int flag : 0;
                                                                                                                                                                                                                                                                                 int newScore( 10 );
                                                                                                                                                                                                                // number of digits for (int in0; is10; ssi )
  5
                                                                                                                                                                                                                                                                                                                                                               // first do Language Modeling...
// If zips do not make sense for recognized state name, ignore
// hypothesis
if currentindes == 0 )
                                                                                             else iff currentledex == 2)
                                                                                                                                         else if( currentIndex == 1 ):
                                                                                                                                                                                                                                                                                                                                                               if( |State2ip::arefirstfwd)igitsLegal( wordkistoryArray( 0 ), i, sta
                                                                                                                                                              iff |StateZip::isFirstDigitLegal( i, stateId ) )
                                                                                                            continue;
                                                                                                                                                                                                                                                                                                                                                                                                    $%.5% $888888 \88
                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                 NYPO.COP 7-22-95 10:24a
                                                                                                                                                                                                                                                                                                                                                                                               888888.88888.88888
                                                                                                                                                                                                                                                                                                                                                                15
                                                                                                                                                                                                                                                                                                                                                                                                                                              ನತ್ತಣನತ
                                                                                                                                                                                                                                                                                                                                                                20
25
                                                                                                                                                                                                                              int buildNypothesis( Recognizer* recog, ZipNypoAC* choicelist, ZipResult& zr, int numbords )
                                                                                                                                                                                                                                                          // numbords corresponds to wasGoodZipPhrase in the onSpeech function. // ZipHypoAC is a growable array. It inherits from ZipHypothesis
                                                                                                                                                                                                                                                                                // function called from within onSpeech() in wapp.cpp
// Stack decoder algoritm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           =====
                                                                         date | 0 | * 2p| 0 | · 00;
date | 3 | * 2p| 2 | · 00;
date | 3 | * 2p| 3 | · 00;
date | 4 | * 2p| 4 | · 00;
                                                                                                                                                                          topList.removeAll();
hypoPD.removeAll();
Hypothesis::heap.empty();
                                                                                                                                               // data contains digits and state name
int data[ 20 ];
                                                                                                                                                                                                        static PriorityQue< Hypothesis > toplist( compareHypothesis );
static PriorityQue< Hypothesis > hypoPQ( compareHypothesis );
30
                                                                                                                        // Get zip and state name from ZipResults zr
char* zp = zr.zipStateName();
                                                        // the class Hypothesis is used to generate the hypotheses. Once
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              else if( currentIndex == 4 )
                                                                                                                                                                                                                                                                                                                                                                                                                                        // only consider candidates below a score of 300
if( newScore[ i ] < 300 )</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    newScore( i ) = ( oldScore ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Language model OK's it...
                                                                                                                                                                                                                                                                                                                                                                                                        Nypothesis *hypo = ( flag == 0 ?
    this :
    new( &heap ) Nypothesis( *this ) );
                                                                                                                                                                                                                                                                                                                                         // put hypothesis into priority queue hpq-spush( hypo );
                                                                                                                                                                                                                                                                                                                                                               hypo->currentScore = newScore[ i ];
                                                                                                                                                                                                                                                                                                                                                                             hypo-swordHistoryArray( currentIndex ] = i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ng n 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cont inue;
35
                                                                                                                                                                                                                                                                                                                                                                                                                                                           confusionScore[ 10*data[ currentIndex ] + [ ] );
40
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:
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( numberds == 5 && | zp( 4 ) == (3*) && | (zp( 0 ) == '6* | | zp( 1 ) == '6* ) & | zp( 1 ) == '8* ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothesis *hypo = 0;
        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // we have those, we will have to convert the information to // a riphypothesis class, which contains into about the recognizer's // opinion on the hypothesised digit phrases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This is the only case where we noticed a regular deletion error. If there is no "B" in the preceding 4 digits, we cannot reliably change 4 digits into 5 with hope of success.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. If the fifth word (4 index) is an 8 or a 3, it is titely to be the state name that is misrecognized. Replace that word "8" or "3" with the place holder string " state".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /* If number of words returned from recognizer is 5 instead of 6
do some corrections:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // flining 88 -> 8 and "state" -> 8 or 3 memcpy( &(data[5]), data, $*sizeof( int ) ); memcpy( &(data[10]), data, $*sizeof( int ) ); memcpy( &(data[15]), data, $*sizeof( int ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2. Only apply 1. if the word "8" appears in any other position in the zip phrase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int *ardsta, *t*date+5, *tstart*date+5, *kend#date+4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int dup . 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  while( seamed )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17( "... .. 8 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .0 . 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   while( *s == 8 LL sesend )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypo = new( &Wypothesis::hesp ) Wypothesis;
hypo-vourrentStore = 0;
hypo-vodate = tetert;
hypo-D.push( hypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Initialize priorityQueue with first hypothesis: == the correc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  memcpy( t+1, s, (send - s) * sizeof( int ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // digit etring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // stack decoder will be used a little later
                                                                                                                                                                                                                                                                                                                                                                                               1f( dup == 0 )
10
                                                                                                                                                                                                                                                                                                               HYPO.CPP 7-22-95 10:244
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Normal case: 6 words were returned by contRecog : 5 digits and state \ensuremath{\text{\tiny EP}} name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        so sions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else if( rundords == 6 )
                                                                                                                                                                                                                                                                                                                                                       int cottetoplist.count(); // should be 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       il hypo )
                                                                                                                                                                                                                                                                                                                                                                                                                                                    // now till Chaicelist
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ^i( ... )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        StateToStateZipSL* ssz * StateZip::findStateToStateZipSL( Ir.etateMame()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypo " new( & Mypothesis::heap ) Mypothesis;
hypo->currentScore " 0;
hypo->data = data;
hypoPd.push( hypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // get all zips for state name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // have been found
while( topList.count() < 40 &&
0 != (hypo=hypoP0.pop()) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // index into table of type State2ip : which file?? int stateId = ssz:>usairdex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            t += 5;
tstart += 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( hypo->nextWordIndex ** $ ) topkist.push( hypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // stack decoder at work until 40 most likely digit-string confu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2p( 4) = tster(t 4) + .0.;
2p( 4) = tster(t 2) + .0.;
2p( 4) = tster(t 2) + .0.;
2p( 4) = tster(t 2) + .0.;
2p( 4) = tster(t 0) + .0.;
2p( 5) = tster(t 0) +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // fill in place holder " state"
strcpy( zp + 5, " state" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        numblords * ir.initFromSpelling();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a. 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypo->propagate( &hypoPQ, stateId );
        35
                                                                                                                                                                                                                                                                                                                       Page 4 of 5
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```

so tring e oAC // return 6, or 5 if correction of deletion error failed. return numbords; if cot ) 5 // There is only one hypothesis, because the correction from 5 to 6  $\prime\prime$  felled. Happens very rarely. new( (void\* )( &( (\*choiceList)( ) ] ) ) ZipHypothesis( recog, 2r ); int j = choiceList > makeRoom( 1 ); white( cnt · ) int | = choicelist -> makeRoom( cnt ); // Get memory for ChoiceList (of type ZipHypAC:ZipHypothesis) rew( (void\* )( &( (\*choiceList)( i+\* 1 ) ) )
ZipHypothesis( recog, topList( cnt )->vslue(), zr ); // process the data from toptist[] class into a ZipHypothesis ge // Mave a took at ZipHypothesis::ZipHypothesis // the class for the choice list.
// After this, we have our ContRecog choice list. // SD\_UDAD id's for the digit strings, and move it into a ZipHyp 10 HYPO.COP 7-22-95 10:24a 15 20 25 30 35 40 45 50

51

```
static char feedity/oci)
static char feedigits/oci)
istatic char maltigits/oci)
static char maltigits/oci)
static char city/oc 0;
static char digits/oc 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      finctude sylindows.hy
finctude satring.hy
finctude sdir.hy
finctude sdos.hy
finctude stdlib.hy
finctude std.hy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // this is the instance of the control 
DgnSlideControl slideControl; 
extern HISTIANCE hinstance; // when 
HINSTANCE hinstance; // him
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #include "dragcpp.h"
#include "wenrol.h"
#include "slidectl.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #include <fcntl.hv
#include <ctype.hv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     class EnrollOlguin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #define LINE SIZE 80 char usrName[ LINE_SIZE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                              protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>...</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Copyright (c) 1991-1995 by Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static long FAR PASCAL _export wndProc( HWND, UINT, WPARAM, LPARAM ); static HAND hWnd;
                                                                                                                                                                                                                                                                                                static bool messageMandled;
static bool sawError;
static bool ignoreErrors;
static char* name;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       training app to train USA files to user's voice. Not done in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WENROLL CPP
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // when we call DgmSlideControl::tibMainInit()
// hInstance must be initialized...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "ctall.vof";
"ctall.vof";
"ctall.vom";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            short boot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void EnrollDigMin::onCommand! NAMD hwnd, UINT cmd, NAMD, UINT childCad )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bool EnrollDigMin::aninitDialog( NYMD hDig, NYMD, lang )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sendDigitemHessage( holg, EMROL_USR_COMBO_ID, CB_ADDSTRING, 0, (DWON
av 0) attrib.ff name );
} white( |findhext( &sttrib ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // wndProc() services
static bool onInitDialog( NUND hind, NUND topCntrl, long );
static void onCommand( NUND hind, UINT cmd, NUND x, UINT y );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              static short wordPause;
static bool useComboSelect;
static bool isMale;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ChecksadioButton( hDIg, RADIO_MALE_ID, RADIO_FEMALE_ID, RADIO_MALE_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // set up the usr listbox
if( !findfirst( "".uq?", Battrib, FA_NORMAL ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              struct fiblk attrib;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hund . holg;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           switch ( cod )
                                                                                                                                                                                                                                                                                                                                            case EDIT SHIFT_ID:
'1 if( childCad == EM_SETFOCUS )
useComboSelect == 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 case EDIT SSNUM 10:

if( childCad == EM_SETFOCUS )

useComboSelect = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            case ENROL USR COMBO 10:
       30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   useComboSelect = 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SetWindowText( GetDigitem( hund, EDIT_SSKUM_ID ), "" );
SetWindowText( GetDigitem( hund, EDIT_SKUTT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( | |GetDigitemText( hund, ENROL_USR_COMBO_ID, usrkame, LINE_SIZE )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Enrol to town: shind;
Enrol to bain: she segethandled;
Enrol to bain: she segethandled;
Enrol to bain: she shore short or short to bain: she she short or short to bain: shape short or short to bain: shape short or short to bain: short or short or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return;
              35
              40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .:
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```
usrHame[ 1 ] = ( SencDigitemHessage( hwrd, RADIO_MALE_ID, BM_GEICHEC * * K, 0, 0 )
                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          case EMBOL BIM_ID:
if( useComboSelect )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 case RADIO MALE ID:
case RADIO FEMALE ID:
iff childcard == BM_CLICKED )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   break;
                                                                                                                                            , o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               char "s = usrName + strten( usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GetOlgitemiext( hund, EDII_SSMUM_ID, usrName +2, LINE_SIZE -2 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     else
beep( "bad.wav" );
                                                                                                                                                                                                                                                                                               for( sausrName; isaloum( *s ); ++s );
                                                                                                                                                                                                                                                                                                                                 for( char* ss = usrName + 2; (*ss++ = *s++) (= 0; );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GetOlgitemiext( hund, EDIT_SHIFT_ID, usrName, LINE_SIZE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             usrkame( 0 ) = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( GetOightemFeat( hard, EMROL_USR_COMBO_10, usrName, LINE_SIZE ) )
    Endbialog( hard, 1 );
                                                                                                                                                                                                                                                                    11( * 1 - 10' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( s · usrName < 6 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CheckRadioButton( hard, RADIO_MALE_IO, RADIO_FEMALE_IO, cmf ); useComboSelect = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( fisdigit( usrName[ 0 ] ) )
                                                                                                                                                                                                            return;
                                                                                                                                                                                                                                                                                                                                                                                                                          beep( "bad.wav" );
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               case CREATING_USER_TEXT_10: break;
                                                                                                                                                                                                                               been( "bad.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       beep( "bad.wav" );
             10
                                                                                                                     WEMOL. 099 7-22-95 11:36a
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                                                                                                                         long fam PASCAL _export EnrollDigHin::wndProc( NUMD hWnd, UINT message, wPAMAN w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ** HB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         " MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SetWindowfext( GetDigitem( hund, CREATING_USER_TEXT_1D ), "Great "> ing New User" );
                                                                                                                                                                                                    case EMROL_EXIT_BIW_ID:
    EndDialog( hwnd, 0 );
    break;
   .
30
                                                                                                                                                                                                                                                                         break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int wid = open( usrName, O_WRONLY | O_BINARY );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *s** = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( wid as -1 )
                                                                                                                                                                                                                                                                                                                                                          close( rfd );
                                                                                                                                                                                                                                                                                                                                                                                           close( wfd );
                                                                                                                                                                                                                                                                                                                        EndDialog( hund, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                              SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCURSOR hCursor = SetCursor( LoadCursor( 0, IDC_WAIT ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int bytesRead;
char buff 2 * 1024 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wid = creatnew( usrName, fA_NORMAL );
close( wid );
wid * open( usrName, O_NRONLY | O_BINARY );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                while( (bytesRead = read( rfd, buf, sizeof(buf) ) ) |= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int rfd = open( ( usrName( ) ) == 'N'
7 "base.usm"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( ufd == -1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    while( bytesRead )
bytesRead -= write( wfd, buf, bytesRead );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MessageBox( hwnd, "Could not create a new usr",
"Enrollment Error", MB_TASKMODAL | MB_ICOMSTOP |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EndDialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enabialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MessageBox( hund, "Could not open one of base.umm or base.um
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Enrollment Error", NB_TASKNODAL | NB_TCOMSTOP |
                                                                                                    Page 2 of 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "base.usf" ), O_RDONLY | O_BIMARY );
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Speechlask*
Recognizer*
UttChannel*
                                                                                                                                                                                                                                                                                                                       short short
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   class TrainOlgWin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  boot frainDigWin::oninitDialog( MWD hDlg, NWD, tong )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 z> Param, LPARAM (Param )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static long FAR PASCAL _export wndProc( NAMD, UINT, WPARAM, LPARAM );
static HAND hand;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static Speechlack *speechlask;
static UttChannel *channel;
static Recogniter* recog;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              static bool messageHandled;
static bool sauteror;
static bool ignoreterors;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // wndProc() services
static bool oninitDialog( NAMD hand, NAMD topCntrl, lung );
static void onCommandt NAMD hand );
static void onCommandt NAMD hand, UINT cmd, NAMD x, UINT y );
static void onSpeech( NAMD hand, SD_CNANNEL ch );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static void setupPrompt( NAMB hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           messageMandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static void reportError( int code, char far "message );
static void SD_CALLBACK_export postSpeechEvent( SD_CHANNEL, SD_CHANNEL_EVEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        static char* name;
static short wordPause;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return returnValue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     long returnValue + 0;
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      handleMessage( LM_INITDIALOG, hAnd, LParam, IParam, oninitDialog );
handleMessage( LM_COMMAND, hAnd, LParam, IParam, onCommand );
                                                                                                                                                                                                                                                                                                                                                               trainDiguin::NMd;
frainDiguin::messag
frainDiguin::sacer
frainDiguin::ignore
10
                                                                                                                                                                                                                                                                                                 Win::ignoreErrors;
Win::name = "dragon123\0
Win::wordPause=256;
Win::speechfask;
                                                                                                                                                                                                                                                                                                                                                                                                             n: : messageHandled;
                                                                                                                                        MERCOL.079 7-22-95 11:364
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                                                                                                                                                                                                                                                                                                                                            .=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // speech driver task ID
20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void TrainDigMin::reportError( int code, char far *message )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SendDigitemHessage( hDig, WDRD_PAUSE_SLIDE_IO, WM_SEISCADLRANGE, 0, 0x02000 e> 0.64L );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sauError = YES;
if( ignoreErrors )
    return;
ignoreErrors = YES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           struct ffblk attrib;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            speechlask * new Speechlask( name, reportError
                                                                                                                                                                                                                                                                                                                                                                                                                                  // Throw up an error message
char buffer[512];
sprint( buffer, "An error has occurred\n code = %d\n message = %a",
code, message );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SendDigitemMessage( hDig, NORD_PAUSE_SLIDE_ID, LM_SETSCROLLPOS, 0x0100, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // set up the prompt listbox
if( ifindfirst( "*.txt", &attrib, FA_NORNAL ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hund = h019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                speechTask->setPar( "computation", (short )1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         speechlask->setPar( "quick-talk", (short )0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 speechlask->setPar( "adapt-tolerance", (short )3 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SendDigitemHessage( hDig, PROMPI_COMBO_ID, CB_ADDSTRING, 0, (DWORD)
attrib.ff_name );
) while( ifindmext( fattrib ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SendDigitemHessage( h01g, USR_COMBO_ID, CB_ADOSTRING, 0, (DADAD) att rib.ff name );
) while( ffindnext( &attrib ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // set up the usr listbom
if( !findfirst( "".uq?", &attrib, FA_HQRMAL ) )
                                                                                                                                                                                             ignoretrrors = 0;
                                                                                                                                                                                                                                                                                                                                                                                          if( stricmp( message, "Bad token" ) )
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                       MessageBox( hand, buffer, "winTalk SDAPI Error", MB_TASKMODAL | MB_ICONSIDP | MB_OX );
                                                                                                                                                                                                                                // terminate... kill the htopParentWindow iff hand )
PostMessage( hand, VM_CLOSE, 0, 0 );
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // prevent recursion
                                                                                                                                        Page 3 of 8
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void SD CALLBACK export frainDlgMin::postSpeechEvent( SD_CHANNEL ch, SD_CHANNEL
ax _EVENT eventin )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void TrainDlgWin::setupPrompt( HUND hUnd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int numDigits( const char* s )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Edefine HANDLE_UM_CHANNELSTART(hund, wParam, 19aram, fn) \
((fn)(hund, (80_CHANNEL )wParam), OL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // EveniMandler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( 0 == Peekwessage( &msg. hund, um_CHANNELSTART, um_CHANNELSTART, PM_NOREM
=> OVE | PM_NOTIELD ) )
PosiNessage( hund, um_CHANNELSTART, (NORD )ch, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char ripBufP( timE_SIZE );
char stateBufP( timE_SIZE );
char cityBufP( timE_SIZE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return len;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for( int len = 0; "s; **s )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    See DSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( eventin == SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int promptOffsets[] = ( .2, .1, 0, 1, 2 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    into peckOffset = promptOffsets + 2 - i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int is recog->promptindex() % 3;
                                                                                                                                                                                                        if( !recog.visListening() )
i = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if ( indigit( *s ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            else if( | isspace( *s ) )
return 0;
                                                                                                                                                                                                                                                                                                 else i a ·l;
                                                                                                                                                                                                                                                                                                                                        if( i == -1 && recog-vististening() )
PostMessage( hWnd, MM_COMMAND, MICROPHOME_BIM_ID, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                      :.0\. : 1 0 ] 4,00:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog-speekPrompt( cityBufp, LINE_SIZE, peekOffset[ 2 ] );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recog->peekPrompt( stateBufP, LINE_SIZE, peekOffset( ) ] );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog->peekPrompt( zipBufP, tiNE_SiZE; peekOffset[ 0 ] );
10
                                                                                                                                                 VEHICU. DP 7-22-95 11:364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // ·1 :: EOF
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  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void TrainD(guin::onSpeech( NUND hund, SD_CHANNEL ch )
                                                                                                                                                                                                                                                                               :
₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // get the utterance handle; do not wait for the end of the
// utterance since the recognition can proceed in parallel
// with the utterance collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SetWindowleat (GetDigitem hand, SAY SIATE IXI 10 ), ( i == 1 ? "Say: " : " " ); 
SetWindowleat (GetDigitem (hand, SAY CITY IXI 10 ), ( i == 2 ? "Say: " : " " );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SetWindowleat( GetDigitem( hwnd, PROMPI_CITY_INI_ID ), cityBuff );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( recog->notifyChannel( ch, SD_CMARKEL_START ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SetWindowlex(( GetDigitem( hWhd, SAY ZIP IXI_ID ), ( i == 0 7 "Say:" : "" ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SetWindowleat( GetDigitem( hand, PROMPI_SIAIE_IXI_ID ), stateBuff );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SetWindowleat( GetDigitem( hWnd, PROMPI_ZIP_IXI_ID ), zipBufp );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                assert( recog );
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cher buf LINE_SIZE 1,
                                                                                                                                                                                                                                                                            if( 0 xx ( digitten 7 recog.>contRecog( digitten ) : recog.>recog( Apass
y ) ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static AC< SO_WORD > passihru;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int digitten = numDigits( s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11( 1 == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            const char* s = recog->prompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SendDigitemMessage( hund, CMDICE_LISI_ID, LB_RESEICONTENT, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if ( digitten )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recog-setVoc( digitsVoc );
recog-setState( "digits" );
recog-seperateDigits( digittem );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recog->killUtt();
return;
                                                                                                                                                                                                                             cher buff LINE_SIZE 1, *b;
                                                                                                                                                                                                                                                                                                                                                                  passhru.removeAl(!);
SD MOND promptID = recog->wordId( s );
if( promptID )
   passhru.add( promptID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recog->setVoc( cityVoc );
recog->setState( (SD_STATE )0 );
                                                                                                                                                                                   int correct : -1;
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                                                                                                                                               Page 4 of B
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void frainDigMin::onDestroy( MAMD )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              => 0 )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                               :
                                                                                                                                                                                                                                                                 iff speechlask )
                                                                                                                                                                                                                                                                                                                                                                                                                                             while( PeelMessage( Lawg, hWrd, UM_CHANNELSIARI, UM_CHANNELSIARI, PM_REMOVE | PM_MOTIELD ) )
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       postSpeechEvent( ch, SD_CHANNEL_START );
                                                                                                                                                                                                                               if( charmel )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SetWindowleast GetDigitems hand, COMFIDENCE_TEXT_ID ), buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               itoa( recog->confidence(), buf, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for( int i + 0; i < recograresultCount(); ++1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->killUttt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static bool backupDisabled * TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       setup@rompt( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recog->nextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog-vnextutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( correct ** -1 )
recog > beep( "bad.wav", SMD_TOGGLEMIC );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSG aso:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog->beep( "bad.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if ( backupplisabled )
                                                                                                                                                                            delete channel;
channel = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( tatromp( buf, recog->prompt() ) )
correct = i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SeredbigitemHessaget hund, CHOICE_LIST_ID, LB_ADDSIRING, O, (DWOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recog->resultName( buf, sizeof( buf ), i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <code>FnableWindow( GetDigitemt hwnd, BACKUP_81M_ID ), IRUE );</code> beckupDisabled * 0;
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                                                                                                                     MEMBOL.099 7-22-95 11:36e
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class Appuin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       long FAR PASCAL esport TrainDigHin::undProc( MAND hUnd, UINT maganga, UPANAN uP
_ => aram, LPARAN IParam )
                                                                                                                                                     // Static Global variables of AppMin
MAMO'! AppMin::Nhrd;
HIASK AppMin::Nhrab;
bool AppMin::nessageHandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               public:
static long FAR PASCAL _export wncProc( HAMD, UINT, WPARAM, LPARAM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          static MUND hund:
static MIASK hlask;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     messageHandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PostQuitNessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return returnValue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      long returnValue = 0;
                                                                                                                                                                                                                                                                                                                          static bool onCreate( NAMD hand, CREATESTRUCT FAR* (pCreateStruct );
static void onEcestroy( NAMD hand );
static void onEcestroy( NAMD hand );
static void onClase( NAMD hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                      static bool sessageMandled;
                                                                                                                                                                                                                                                                       friend int PASCAL WirMaint HINSTANCE, HINSTANCE, LPSTR, Int ):
                                                                                                                                                                                                                                                                                                                                                                                                    // undProc() services
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      delete speechlask;
speechlask = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               handleMessage( LM DESTROY, hu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             delete recog;
recog = 0;
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                                                                                                                                                                                                                                                                                                            nd( NIMO hand, UINT and, MIND A, UINT Y );
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void frairOtgMin::onCommand( MUND hUnd, UTN1 cmd, HUND, UTN1 )
(
                                                                                                                                                                                                                                                                                                                                                     if recog ** 0 )
                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Case BYCKOD BIN 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if recog & charmet & recog->getUser() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ewitch ( cad )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  case USR_COMBO_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               case CHOICE_LIST_ID:
break;
                                                                                                                                                                                                                                                                                                                                                                                                       breek;
                                                                                                                                                                                                                                                                                                                      cher promptName( LINE_SIZE ];
                                                                                                                                                                                                                      switch( usrName( strien( usrName ) - ) ) )
                                                                                                                                                                                                                                                                             if( |GetDigitemlext( hund, PROMPT_COMBO_ID, promptHame, LIME_SIZE )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( recog-ygetChaimel()->carBackup( maxBack ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( maxBack ss 0 ) maxBack = 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      int maxBack = (recog->promptIndex() % 3);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    channel ->flush();
recog->saveUser();
                                                                                                                                                   digits/oc = maiDigits/oc;
city/oc = maiCity/oc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( wastistening )
recog-villaten( fRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                  setupprompt( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (); ()) tdescent ()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (()) Innivend
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( wastistening )
recog->listen( false );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recog.>notifyCharmel( 0, SD_CHANNEL_BACKUP );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int wastistening = recog.vististening();
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                                                                                                                         MEMBOL. 079 7-22-95 11:364
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                                                                                                                                                                                                                                                                                                        *> B_CIL );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *> 011" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       # );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ** or user file!",
                                                                                                                                                                                                                                                                                                                                              Case NORD_PAUSE_SLIDE_ID:
            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( recog-vististening() && recog-vprompt() == 0 j
recog-vnextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowleat( GetDigitem( hwnd, WICROPHOME BIM ID ), recog·visListening() ? "Wicrophome Om" : "Wicrophome
                                                                                                                                                                                                                                                                          if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                             setupPrompt( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recognisten( frecognististening() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SetWindowText( GetDigitem( hund, MICROPHOME_BIM_ID ), "Microphone Of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( recog->setUser( usrName ) == 0 |
recog->setVoc( digitsVoc ) == 0 |
recog->setVoc( cityVoc ) == 0 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         channel->open( postSpeechEvent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         break;
case if:
case if:
digitsVoc = femDigitsVoc;
cityVoc = femCityVoc;
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog a new Recognizer( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     channel = new WindowsAdaptChannel( promptWame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HCURSOR hCursor = SetCursor( toadCursor( 0, IDC_WAIT ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            default:
return;
                                                                                                                                                                                                                                bool wastistening = recog.>ististening();
                                                                                                                           If west istening )
                                                                                                                                                   speechTask->setPar( "word-pause", (short )wordPause );
                                                                                                                                                                                       ff( wastistening )
recognitisten( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EndDialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RessageBax( h\u00e4rd, "Cauld not apen either digita.vac or ctatt.vac
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O, MB_ICONEXCLANATION | MB_OK );
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int PASCAL WirMain( HIMSTANCE blost, MIMSTANCE bPrevinctance, LPSIR ipszCmdLine.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAMO hand . Createdindou( name,

NE OFERLAPPEDVINDOU | WS_CLIPCHILDREN,

OV_USEDEFAULT,

OV_USEDEFAULT,

OV_USEDEFAULT,

OV_USEDEFAULT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static const char name!) = "GragCpp";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerMessageQueue( 128 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Showkindow( Applin::hland, SW_HIDE );
Showkindow( hland, nCadShow );
UpdateWindow( hland );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     iff IhPreviostance )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ::hinstance = hinst; // the global hinstance for the slidercti slideControl.libMeinInit(); // register the slider class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSG asg;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( hund == Appwin::hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                while! GetMessage! Amag, 0, 0, 0 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                undclass.hinstance hirac, undclass.hicon loadic loadic redclass.hicon loadic redclass.hicon loadic redclass.hicon loadic redclass.hicon loadic redclass.hicon loadic redclass.hiconariam loadic redclass.hiconaria
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                                                                                                                                                                                                                                                                                                                                                          !ranslateMessage( Lmsg );
DispatchMessage( Lmsg );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RegisterClass( Lundclass );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wrdclass.lpszMeruMame = 0;
wrdclass.lpszClassMame = name;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   less.tpinkndProc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recog->listen( 1 );
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                                                                                                                                                                                                                                                  MEMBOL.079 7-22-95 11:364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hingt,
lpatCadLine );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appuln: und roc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hinst;
toadicon( 0, MAKEINIRESCURCE( IDI_MY_ICOM ) );
toadCursor( 0, IDC_ARROM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LoadCursor( 0.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void AppWin::onCommand( NUMD hWnd, UINT cml, NUMD, UINT )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void Applin::onMCDestroy( NUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bool AppWin::onCreate( NUMD hund, CREATESTRUCT FAR* )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void Applin::orDestroy( MUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void Applin::onClose( NUND hund )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FARPROC (pfn = MakeProcinstance( (FARPROC )EnrollDigMin::undProc, hi => nstance );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D> Ce );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return msg. waran;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PostQuitMessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hlask = GetCurrentTask();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Switch ( cmd )
                                                                                                                                                                                                                                                                                                                                                                                    DestroyWindow( hWhd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PostNessage( hund, UM_COMMAND, UM_INIT_DIALOG, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hund . hund;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Case UM INIT DIALOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         default:
messageHandled * FALSE;
       30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // create dialog box proc instances for use later
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PosiMessage( hund, um_CLOSE, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( DialogBox( hinstance, "Enrolidialog", hWnd, (DigPROC )ipin ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               freeProcingtance( lpfn );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DislogBox( hinstance, "lestDislog", hMnd, (DLGPROC )lpfn );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                freeProcinstance( lpfn );
lpfn = MakeProcinstance( (FARPROC )TrainDigHin::wmdProc, hinstan
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5 10 15	NEMBOL.CPP 7-22-95 11:36a				return( messageHandled 7 returnValue 2 DefWindowProc( hWrd, message, wParam, (Param ) ); 3	<pre>default:</pre>	switch( mrssage )  {     handleMessage( LM_CREATE, hknd, wParam, (Param, onCreate );     handleMessage( LM_CREATE, hknd, wParam, (Param, onCestroy );     handleMessage( LM_CROSE, hknd, wParam, (Param, onClose );     handleMessage( LM_CROSEALM), bknd, wParam, (Param, onCommand );	messageHandlad = TRUE; long returnValue = 0;	long FAR PASCAL_export Applin::undProc( HUND hund, UINT message, uPARAN uParam, *> LPARAN FParam )
25			 <del></del>		<u></u>		<u>.                                  </u>	-	Par en
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35	Per co		·						
	8 of 8	•	; ·	g taga <sup>ar</sup>					
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#include string.h>
#include satert.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // MCMLMA frading Workstation, speech server application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CommPars Comm::defaultPars( 2, 9600, MOPARITY, 8, OMESTOP8IT );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  пинининининининининининининининининин
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #include "demmon.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Workhorse timer callback proc for checking serial ports.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 extern "C" (
                                                                                                                                                                                                                                                                                                                                                                                                                                  void Comm::timerProcPrimitive()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       //#include "dragcpp.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /* end of extern "C" */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright (C) 1994 Dragon Systems Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Original Version: Hal Strausberg 3/28/94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            comm module. This module is responsible for controlling the serial port.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Modification Mistory:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0010
                                                                                                                                                                                                                                                                                                                                                                                      // check for input from the serial port:
if( commend() > 0 )
5
                                                                                                                                                                                                        if( curkoCher >= NOCMAR_TIMEOUT )
needResync = IRUE;
                                                                                                                                                                                                                                                                                                              // send a message to our window to parse the message
postMessage( hund, UM_COMM_CHECK_MSG, (MORD )0, (DMDRD )this );
                                                                                                                                                                                                                                                                                                                                                            curkoChar = 0;
                                                                                                                                                                                                                                                      curNoCher**;
                                                                                                                                                                          if outgoing)

    see if we should send resync message or have a message to send
confirite();

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Person
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Globals .....
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                                                                                                              DEMICH. CPP 7-22-95 10:02a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Charge
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 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          yold CALLBACK _export Comm::comllimerProc( MAID, UINI, UINI BURE )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void CALLBACK _export Comm::com271merProc( MAND, UINT, UINT, BUDDD )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Comm::Comm( HWND hund, CommPars* defPars ) -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // constructor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     void CALLBACK _export
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         old CALLBACK _export Comm::com4TimerProc( NUND, UINT, UINT, DUCKD )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( com3 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( com/ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if com? )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( com! )
                                                                                                                                                                                                                                                                                                                                                                                default:
err = IE_OPEN;
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( defPars == 0 )
    defPars == &defaultPars;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Case 3:
                                                                                                                                                                                                                                                                                                                                   iff "global is 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unitch( defPara->port )
 30
                                                                                                                                                                                                                                                                                          err = IE_OPEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if ( needlesync)
                                                                                                                                                        .parity = defPars->parity;
.databits = defPars->databits;
.atopbits = defPars->stopbits;
.breaklen = defPars->fax
.inx = defPars->inx;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     curkoChar * 0;
needResync * fALSE;
PostNessage( hAnd, UM_COMM_SEND_SYNC_MSG, 0, (DWOOD )this );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Comm::com3TimerProc( NUMD, UINT, UINT, DUDAS
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        com2->timerProcPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   com1->timerProcPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            com3->timerProcPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 com(->timerProcPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                global . 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            7 of 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                               45
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Comm:: Comm()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               destructor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hund = hund;
index = 0;
curNoCher=0;
needResync=!RUE;
outGoing=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            params.cts
params.dsr
params.dtr
params.rts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // hill the timer if started.
if( wlimerID )
   Killlimer( MULL, wlimerID );
                                                                                                                                                                                                                                                                                                                                                                                                                 char rame [20] * "CON";
                                                                                                                                                                                                                                                                                                                                                                                                                                             /* open the correction and establish the settings - show hourglass */ \mbox{err} = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        combisconnect();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    itoat parama.port, neme + 3, 10 );
                                                                                                                                                                                                                   800L (In . (eff .. 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /* see if already open */
if( connectEd >= 0 )
                                                                                                                                                                                                                                                                                                                                                          if( (connected = OpenComm( nume, INBUFSIZE, OUTBUFSIZE )) >= 0 )
                                                                                                                                                                                         7 ( rtn + 1 )
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     err = IE OPEN;
return FÅLSE;
                                                                                                                                                                                                                                                                                       condetVindowsParama( &parama, &dcb);
dcb.ld * (BYIE)parama.port-1;
err * SetCommState( &dcb );
                                                                                                                                                            void CALLBACK _export ( *tmProc )( KMRD, UINT, UINT, DUCRD );
                                                                                                                                                                                                                                               err = correctld;
                                                                                                       switch( params.port )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   defpars.>cts;
defpars.>dtr;
defpars.>rts;
10
                                                                                    DEAMON.CPP 7-22-95 10:024
                                                                                                                                                                                                                                                                                                                                                                                    ":0\" • [ $ ] ...\0";
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                                                                                                            //------
                                                                                                                                                                                                                                                                                                                                                                                                                                  //
// disconnect from the device
                                                                                                                                                                                                                                                                                                                                                                                                      BOOK Comm::combisconnect()
                                                                                                                                           returnt ere .. 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01 obel = 0;
                                                                                                                                                                                                                                                                                                                    /* close the connection */
ff( global && *global=*this )
*global = 0;
                                                                                                                                                                                                                                                                                                                                                                            err = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return rtn; /* IRUE if OK */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         else if( connected >= 0 )
                                                                                                                                                                                                                                                              if( connected >= 0)
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    globel = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CloseComm( connected );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // rtn = (wlimerID I= 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // wTimerID = ( taProc != 0
// ? SetTimer( MULL, TIMER_EVENT, TIMER_INTERVAL, taProc );
// : 0 );
                                                                                                                                                                                                                     /* close a Windows connection */
err = CloseCommt connectid );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          global = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // GREG ... I am turning off the polling for mercury
// start a timer to read the serial port.
                                                                                                                                                                                          connected = NFG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cornected = NFG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               globel = 0;
err = HE_OPEN;
rtn = 0;
35
                                                                                      Page 2 of 5
   40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tmProc:comllimerProc;
tmProc:com2limerProc;
tmProc:com3limerProc;
tmProc:com4limerProc;
    45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9999
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// read a string of chars from the comm device
// read a string of chars from the comm device
// read a string of chars from the comm device
// read a string of chars from the comm device
// read a string of chars from the comm device
// read a string of chars from the comm device
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// read a string of chars from the comm device
// read a string of chars from the common device
// read a string of chars from the common device
// read a string of chars from the common device
// read a string of chars from the common device
// read a string of chars from the common device from the charge from the cha
                                                                                                                                                                                                                                                                                                                       // write a string of chara to the commu device
                                                                                                                                                                                                                                                                                        Int Comm::comurite()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if connected >= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /* close the cornection */
err = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              err = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return( err == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /* always try to read */
count * ReadComm( cornectId, ExrBuffer[ index ], IMBUFSIZE-index );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    it connected c 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return index ** count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( count <= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         configtWindowsParams( Aparams, (DCB far *)Edcb);
dcb.id = (BYIE)params.port*1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /* set device to ready */
err |= EscapeCommSurction( connected, SETDIR );
err |= EscapeCommSurction( connected, SETNON );
err |= EscapeCommSurction( connected, SETNON );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             err | * EscapeCommFunction( connectEd, RESEIDEV );
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /* check for errors */
err * GelCommError( commected, NULL ) & Ox1FF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           err = SetCommState((DCB far *)&dcb);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              else if( err > 0 )
err += 1024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GetCommEventMask( connected, OxFFFF );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    count . . count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( err == CE_FRAME )
err = 0;
10
                                                                                                                                                                                                                                         DEAMON.CP9 7-22-95 10:024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return 0;
   15
20
   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void Comm::comSendBreak( int len )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // send a break sequence to the device
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BOOK Comm::checkMessage()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Processes the incoming message.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BOOL Comm::sendSyncHsg()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // does the right thing with an incoming sync message.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      int Comma::com/rite( LPSTR lpStr, int len )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // we are throwing away the message...
// it you want to do something... inherit from and overload CheckRessage()
index = 0
xrBuffer( 0 ) = 1/0;
// zero'ed out recieved message
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DUORD ticks;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( connected >= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if ( connected >= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if ( connected >= 0 )
           30
                                                                                                                                                                                                                                                                                                                                                                                             if( item )
{en * perams.breaklen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /* here we'll do an output regardless of bytes still being quauad */
if( (count = combheckOutputStatus() )>= 0)
count = combobutput( lpStr, len );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /* here we'll do an output regardless of bytes still being quantad */
if( (count = combobutput(xbuffer, istrient xbuffer ) );
                                                                                                                                                                                                                                                                                                                                   rtn = SetCommBreak( connectId );
           35
                                                                                                                                                                                                                                         Page 3 of 5
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BOOL Comm::comClearLinet DWORD dwGuiet, DWORD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // read and discard input until line to clear or timeout occurrs
                                                                                                                                                                                                                                                                                                                                                                                                               BOOK Comma::comSetParama( CommPara* (pParama )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int Com::comGetParama( CommPara" | pParama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return current com perameters
                                                                                                                                                                                                                                                                                                                                                                                                                                             set com perameters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DUCRO tHOW, IStart, Ilmput; char strf 128 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return correctld;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tStart = timput = GetlickCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *(pharass = parass;
                                                                                                                                                                                                                                                                                                                                                                       ill connected ve 0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( comfleed( str, 128) )
timput = tHou;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( tNow > tStart + duMax )
return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  thow - GetlickCount();
                                                                                                                                                                                                                       dcb.ld = (BYTE)parama.port:1;
                                                                                                                                                                                                                                                             comGetWindowsParama( lpParama, &dcb );
                                                                                                                                                                                                                                                                                               err · 0;
                                                                                                                                                                                                                                                                                                                                     OCO deb;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( tNow > tInput + deQuiet )
  return INUE;
                                                                                                                                                                                     err + SetComState( &dcb );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    il Irth )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     while( GerfickCount() < ticks + len)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ClearCommBreak( connected );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /* break is on */
ticks = GetTickCount();
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                                                                                                                           DEJANON. CPP 7-22-95 10:02.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // return rx and tx queue counts, or flush the queues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void Comm::comGetQueueCounts( LPINT lpRxq, LPINT lpTxq )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    id Comme::comGetVindowsParams( Commeters* (pPres, DCB far *lpDCB )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               convert our params struct to a Windows OCB struct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /* using Windows */
GetCommError( connected, Acomstat );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          *lpRxq = comstat.cbirdue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMSTAT constat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *(plxq = comstat.cbOutoue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GetCosmState( connectEd, 1p0CB );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( err == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pDCB->BaucRate a lpPrag->baud;
pDCB->ByteSize = lpPrag->databite;
pDCB->Parity = lpPrag->parity;
pDCB->Stopbits = lpPrag->etopbite;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 persons a "ippersons;
30
                                                                                                                                                                                                                                                                                                                                                                     ->fitation = (BYTE)|pPrms->dtr:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ->foutX = (BYTE)|pPrmm->outx;
|->finX = (BYTE)|pPrmm->inx;
|->fPeCher = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fOutxCtaflow = (BYTE)lpPrmm.>cts;
fOutxDarflow = (BYTE)lpPrmm.>der;
fOrrO(sable = 0;
                                                                                                                                                                                                                                                                                       i = IMBUTSIZE / 3 * 2 * 1;
m = IMBUTSIZE / 3 * 2 * 1; /* two thirds of the buffer size */
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		<u>;</u>	78333	~			しるション	_	OF SECTION
5		flushCom	// flush the input and outpr // som::comflushQueues()	// EscapeCommond return count;	err * GetCo	/* we're using /* WriteComm w than stem byt count = WriteC	// performs write fun // the output statu // Comm::combooutput int count;	/* we're using Windows * err * '(CE_TRAME   CE_BR if( err != 0 )     return '1; return commitat.cbDuffue;	// find out if an output error h // how many output bytes are s // comm::comcheckOutputStatus() {     COMSTAT comstat;
10	DEMICH . CPP	R cornected, 1);	// flush the input and output buffers // d Comm::com/lushQueue() com/lushQueue()	<pre>// EscapeCommfunction( connected, SEIXON ); return count;</pre>	ommError( connect = GetCommEventHi ntHask( connection	/* we're using Windows */ /* WriteComm will return immediately, having than alen' bytes if needed */ count = WriteComm( connected, lpStr, len );	// performs write function for appropriate bo // the output status has already been check // Comm::combooutput( LPSIM lpStr, int len ) ( int count;	Windows */ WE   CE_BREAK) & .cbOurque; /*	// find out if an output error has occurred // how many output bytes are still queued // comm::comchectbutputStatus() { COMSIAI comstat; /* Windows 1
15	PP 7-22-95 10:02a			ld, SETXON 1;	<pre>count &lt; 0 ) err = GetCommError( connected, MJLL )&amp; 0x1ff; // event = GetCommEventMask(connected, Dxffff); GetCommEventMask( connected, DxfFff );</pre>	mediately, having written fewer "/ d, IpStr, len );	// performs write function for appropriate board/port, assuming that // the output status has already been checked and is ok int Comm::comboOutput( LPSIB lpStr, int ien ) ( int count;	/* we're using Windows */ err * "(CE_FRAME   CE_BREAK) & GetCommError( convected, &comstat ); if( err != 0 )    return -1; return commatat.cbOutQue; /* number of bytes remaining to be sent */	as occurred and till queued /* Windows status struct */
20	ę	x <b>!</b>	: :		##B;	iccen fewer	is ok	vectid, &comstat	ruet */
25			·					ent */	
30	=								
35									
10	7 <b>4</b> 5 of 5			• .					# 1 <sub>1</sub>
<b>45</b>	•		••	. ,			·	·	
50	; ;								

```
Binclude "std.h"
Binclude satdlo.h»
Binclude satdlib.h»
Binclude satdlib.h»
Binclude satdlib.h»
Binclude satdlib.h»
Binclude satdlib.h»
Binclude slibe.h»
Binclude slibe.h»
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // doubly linked list
peq< vocStateMachine > vocStateMachine::vscDeq;
Deq< UserPhonetics > UserPhonetics::upDeq;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // Initialize activeUser to 0
SD_USER UserPhonetics::activeUser = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #include "dragcpp.h"
                                                                                                                                                                                                                                                                                                                                                  // constructor
// parameters: Task name
//
                                                                                                                                                                                                                                                                                                                                                                                                                               // Besp function used in itsGoodAdapt() or itsBod() in WAPP.cpp
yold besp( char* wavfileHome, int move )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    adeline DEBUG 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ) /* end of extern "C"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            extern "C" (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Author: Greg Gadbols
Created: 1993 - 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           andPlaySound[ wavFileHame,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyright (c) 1993-1995 by Oragon Systems,
                                                                                                                                                                                             assert( tashkane );
if( lversbuf(0) ) {
    SOfrror_SetNandler( soffrHandler );
}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wrapper around Dragon Systems! VoiceTools 1.1(IM), toolbit to expose the Speech Driver API (SDAPI) to customers. The Hrapper simplifies some of the tasks to set up a recognizer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DRAGCPP.CPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            :
                                                                                                                                                                        DELECTP. COP 7-22-95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mode & Ux11 );
                                                                                                                                                                                                                                                                                                                                                  Error handling function CALLBACK
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                                                                                                                                                                            11:35
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25
                                                                                                                                                                                                                                           SpPer DetValue( SDPer_GetHandle( parkage ), val, sizeof(una32) ); #170#] DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SDPar GetValue( SDPar_GetNandle( perName ), val, sized(intl6) #irder DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        end:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDPar GetValue( SDPar_GetHandle( parkage ), val, MAX_TEXT_PAR ); #ifde( DEBUG
                                                                                                                                                                                                                                                                                                         // Get Parameters: 4 byte value, unsigned
void Speechlask::getPar( const char* parkame, uns32* val )
                                                                                                                                                                                                                                                                                                                                                                                              and I
                                                                                                                                                                                                                                                                                                                                                                                                                                     Birdet DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Get Parameters: 4 byte value
yold SpeechTask::getPer( const char* parkame, int32* val )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Get Parameters: 2 byte value yold SpeechTest::getPar( const cher* parName, inti6* val )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Get Parameters: 1 byte value 
void SpeechTask::getPar( const char* parkame, char* val )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Speechlask:: Speechlask()
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOPer CetValue( SDPer_GetHandle( parHame ), val, siteof(int32) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // because there can be aultiple instance of this one program, the task // name is constructed using the instance handle in the Windoln routine // so that every instance will be unique
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( task );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SDTask_Close( task );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // open the task
task = SDTask_New( taskName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // If our task is already opened, close it!
// a previous execution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rask = SDIesk GetHandle( teskHame
if( task ) SDIesk_Close( task );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOADi Init( );
SOADi Celversion( versbuf, mizeof( versbuf ) );
SOADi Celversion( versbuf );
Printf( "Kann", versbuf );
printf( "Copyright ( c ) Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       printf( "% = %hd\n", perMame, "vet );
                                                                                                                                                                                                                        printf( "%s = Xtu\n", parkame, "val );
                                                                                                                                                                                                                                                                                                                                                                                                              printf( "% = %ld\n", perName, "val );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               printf( "%s = %s\n", perName, val );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                We don't use any state from
    45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1991, 1992\n*
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```

```
getPar( parName, &val );
Hendii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // UltChannel constructor 
UttChannel::UttChannel()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bildel DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      getPar( parName, val );
#endit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      getPar( parName, &val );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              getPer( perName, &val );
Wordit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SDPer SetValue( SDPer_GetHandle( perHome ), (void *) val, strien(val) +1 ); #ifdef DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                       UttCharmel:: 'UttCharmel()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Set Parameters: A byte value, unsigned void Speechlash::setPar( const chare parliame, uns32 val )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Set Parameters: 4 byte value
void SpeechTask::setPar( const char* parHame, int32 val )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void Speechlask::setPar( const chare perlume, int16 val )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Set Parameters: 2 byte value
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Set Parameters: 1 byte value
void Speechlash::setPar( const char* parName, char* val )
                                                                                                                                                                                                                                                                           int UttCharmel::open( SD_CNANKEL_EVENT_MANDLER ) ( return( utt() i= 0 ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bildel DEBUG
                                                                                                                                                                                            SO_UIT_UttChannel::slartUtt( ) { return_utt(); }
                                                                                                                                                                                                                                      void UttChannel::close() ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SDPar_SetValue( SDPar_GetNandle( parName ), (void *) &val, sizeof( uns32 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDPar_SetValue( SDPar_GetHandle( parHame ), (void *) &val, sizeof( int32 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOPer_SetValue( SOPer_GetMandle( parHame ), (void *) &val, sizeof( intlo ) )
                                                                                                                                                                                                                                                                                                                                                 uttUtt=0; uttIndex = 0;
uttPrompit = new chart Uit_PROWPI_LEWGIH );
uttPrompit 0 ) = '\0';
choices = new ArrayOfRecogBesults;
5
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                                                                                                                                        DANGCTP.CTP 7-22-95 11:35a
15
                                                                                                                                                                                                                                                                                                                                                      choices = 0; )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // Put spaces in between digits int digitten ) void UttCharne(::seperateOigits( int digitten )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void UttChannel::setPrompt( const char* newPrompt )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SD_UIT UttChannel::peckUtt( ) ( return 0; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Put name of recognized utterance in buf
int UttCharrel::resultHome( chare buf, int sizebuf, int ithResult )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Get the ith results from choice list
const Recognesult* UttCharmel::result( int ithResult )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return res->getHame( buf, sizebuf );
else if( sizebuf && buf )
buf[0] = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( uttPrompt = 0 )
  uttPrompt = new char[ UTT_PROMPT_LENGIM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( int i=0; r < ithResult; i++ ) {
   presult = ( RECOG_RESULT_EMTRY * )
   { ( char * )presult + sizeof( RECOG_RESULT_EMTRY ) +
        sizeof( SO_MORO_SPEC )*( presult-Tribords - 1 ) );
}</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RECOG_RESULT_ENTRY *presult * &(choices->recogResults( 0 1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             strncpy( uttPrompt, newPrompt, UTI_PROMPT_LENGIM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char "ss = newPrompt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cher "newPrompt = new char ( Uff_PROMPT_LENGIN );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               assert( digitten > 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        char "s = uttPrompt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          const RecogResult *res * result( ithResult );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return (const RecogResult* )presult;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   wilet .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              esser(( s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( ithResult >= resultCount() ) return 0;
    30
                                                                                                                                                                                                                                                                                                                                                                                                     while( isspace( *s ) )
                                                                                                                                                                                                                                                                                                                                                 ift isdigitt 's ) )
                                                                                                                                                                                                                                                                                     if( digitlen -- *= 0 )
break;
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                                                                                                                                          Page 2 of 17
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SD_UIT- UTICharmel::giveAuayUtic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Move utterance in charmet out of it.
SD_UTT UttCharmet::giveAwayutt( UttCharmel* toMe )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void UttCharmel::purge() ( ) // UttCharmel is not buffered...
void UttCharmel::flush() ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Get next utterance void uttChannel::nextUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // delete utterance from the charmel void uttCharmel::hitlutt()
                                                                                                                                                                                                                                                      SD till rtn = tofe->uttutt = utt();
uttutt = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if utto) (
                                                                                                                                                                                      return rin;
                                                                                                                                                                                                                                                                                                                                                                                    ArrayOfRecogResults *tapChoices * taMe->choices;
taMe->choices * choices;
choices * tapChoices;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 char *tmp=toMe->uttPrompt;
toMe->uttPrompt = uttPrompt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17 vtt() ) (
                                                                                                                                                                                                                     essert( rtn < 20 );
                                                                                                                                                                                                                                                                                                                                      choices->recogVoc = 0;
choices->recogUser = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( uttPrompt )
uttPrompt(0) - '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uttPrompt . tmp;
                                                                                                                                                                                                                                                                                                     tone-skillutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assert( tolle );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uttPrompt = newPrompt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       delete () uttPrompt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      toMe->uttindex = uttindex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( as in newPrompt )
...ss;
     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SDUTT_Delete( utt() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOUTH_Delete( utt() );
   10
                                                                                                DRAGOP. OPP 7-22-95 11:35a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ייונטננ - 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uttutt . 0;
20
25
                                                                                                                                                     // destructor
WindowstiveChannel::'WindowstiveChannel()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WindowsLiveCharmel::WindowsLiveCharmel( const char* promptfname )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // beep
void UttCharmel::beep( char* wavfileName, int mode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bool UttChannel::nextPrompt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bool UttChannel::canBackup( int n )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // get next prompt bod! UttCharmet::peekPrompt( char* buf, int bufSize, int promptsAhead ) {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // WindowsLiveChannel constructor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SD UIT rtn = utt();
utfUtt = 0;
if( prompt() )
*uttPrompt = '\0';
                                                                                                                                   WindowstiveChannel::close();
                                                                                                                                                                                                                                                                                                                                                                                                                                            mic=0; uttutt=0; flag=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::beep( wavfileHame, mode );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return( uttPrompt && *uttPrompt );
                                                                                                                                                                                                                                                                                                                                                                                                                 uttindex = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return in;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  choices.>recogVoc = 0;
choices.>recogUser = 0;
                                                                                                                                                                                                                                                                                                                                                                                ill promptiname && "promptiname )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( promptsAhead )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return rtn;
 30
                                                                                                                                                                                                                                                  promptfilename = 0;
                                                                                                                                                                                                                                                                                                                                             promptfilename = new char[ strlen(promptfname) +1 ];
                                                                                                                                                                                                                                                                                                  ii( istricmp( stpcpy( promptfilename, promptfname ) -6, ".spc" ) )
ilag |- SCP_PROMP1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strncpy( buf, prompt(), bufSize );
 35
                                                                                                                                                                                                                                                                                                                                                                                                               nextindex = 0;
                                                                                         7aga 3 of 17
                                                                                                                                                                                                                                                                                                                                                                                                                                              uttPrompt+0; promptfile=0;
 40
                                                                                                                                                                                                                                                                                                                                                                                                               chanison = 0;
   45
   50
```

```
int WindowsLiveChannel::opent SD_CHANNEL_EVENT_MANDLER notifyRoutine ) {
                                                                                                                                                                                                                                                                                  // Make charrel listen bool turnOn:)
                                                                                                                                                                                                                                                                                                                                      bool WindowsLiveCharmel::isListening() ( return chanlaOn; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void WindowsLiveChannel::close( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SDCharmel_SetEventHandler( mic, SD_CHANNEL_START, notifyRoutine );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chanison = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SDCharmel_Claim( mic, YES );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( promptfilename && ipromptfile ) (
  promptfile = fopen( promptfilename, "r" );
  essert( promptfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( mic == 0 )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // the first channel is the microphore...
SD CMANNEL ITERATOR cirl;
SDChannel Therate( &ctrl );
mic = SDChannel_Mext( &ctrl );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( mic==0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( promptfilename )
                                                                                                                                                               // if channel is already on return immediately, otherwise return( < chantscherturnOn ) i= 0
7 Spichannel SetHiCON (mic ) 1:
SDChannel SetHicOff( mic ) );
                                                                                                                                                                                                                                                    assert( mic );
                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( promptfile )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E aic )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          promptfilename = 0;
                                                                                                                                                                                                                                                                                                                                                                                                      fctose( promptfile );
promptfile = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            detete promptfilename;
10
                                                                                                         DILLGCTP.CPP 7-22-95 11:35a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Tell charmel to start
bool WindowstiveCharmel::notifyCharmel( SD_CHARKEL ch, SD_CHARKEL_EVENT av )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // Get next prompt
bool WindowsLiveChannel::nextPrompt()
                                                                                                                                                                                                                                                                                                                                                                                                                               (or(;;)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int c, size = UTT_PROMPT_LENGIM -2; char *p;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           essert( nextIndex >= 0 );
// essert( nextIndex >= uttindex );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) // if SD_CHANNEL_START
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if ( promptfile == 0 ) return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  it ( uttPrompt == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               f( ev == SD_CHANKEL_START )
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              uttPrompt(0) . '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              utiPrompt = new char[ UTT_PROMPT_LENGTH ];
                                                                                                                                                                                                                                                                                       while( (csgetc(promptfile)) i= EOF LL "c i= '\n' ) {
   if( mize ) {
                                                                                                                                                                                                                                                                                                                                    while( (c=getc(promptfile))=== ' || c=='\(' );
ungetc( c, promptfile );
                                                                                                                                                                                                                                                                                                                                                                                       mize = UTI_PROMPI_LENGIM -2;
p = uttPrompt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               it ( ististening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( u )
Sourt_Delete( u );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SD_Ull u = SDChennel_Read( ch, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             choices->recogUser = 0;
choices->recogVoc = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( mic as ch );
assert( choices );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return( (uttUtt=SDCharmel_Read( ch, 0 )) 1= 0 );
                                                                                                                                                                   *p++ = c;
                                                                                                                                                                                                 ungetc( c, promptfile );
                                                                                                                                                                                                                    thile( (cagetc(promptF)le))== '
   35
                                                                                                            1000
       40
                                                                                                                                                                                                                *pro e | | com'(t' );
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```

```
// WindowsfileChannel constructor
// Initialize prompt file name and utt file name
WindowsfileChannel;:WindowsfileChannel( const char* prompt
windowsfileChannel;:WindowsfileChannel( const char* uttfname, const char* prompt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // peek for an utterance
sp_UTT WindowsLiveChannels:peekUtt( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // beep
yold WindowstiveChannel::beep( char* wavFilsMame, int mode )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Get next charmel
yoid WindowstiveCharmel::nextUtt()
                                                                                                                                                                                                                                                    WindowsLiveCharmel( promptFrame ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return( chanla0n ? SDChannel_Read( mic, CM_PEEK ) : 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if (mode & SMD_TOGGLEMIC) && isListening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        itt uttt) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return( uttPrompt AL *uttPrompt
                                                                                                                                                                                      notifyRoutine = 0;
uttfile = 0;
                                                                                                                                                 if( uttiname && "uttiname )
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOUR Defere( utt() );
uttuff = 0;
...extindex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 else if( c**EOF ) (
uttPrompt[0] = '\0';;
uttIndex = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     listen( FALSE );
::beep( wavfileHame, mode & 'SMD_ASYMC );
listen( TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          *p = '\0'; LENGIH -2 t= size ) (
                                                                                                                                                                                                                                                                                                                                                                                                              ::beep( wavfileHame, mode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uttindex = nextindex;
  10
                                                                                                                         DEAGCPP.CPP 7-22-95 11:35s
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                                                                                                                                                                                                                                                                                                                                   // close the file channel
void WindowsFileChannel::close()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WindowsFileChannel:: "WindowsFileChannel()
                                                                                                                                             // Start utt, seek the beginning, and read 
// function called from notifyChannel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // Open the channel :: open( SD_CMANKEL_EVENT_MANDLER notifyNo )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eise
uttfilename = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WindowsFileChannel::close();
                                                                                                                                                                                                                                                                                                                                                                                                                                    return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          notifyfloutine = notifyfle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // open list file ift promptfile )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( uttfilename && *uttfilename );
                                                                                                                                                                                                                                WindowstiveChannel::close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mesert( notifyMe );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // if there is no utterance, close the file channel iff futtfile )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // open utt file
if( uttfilename & luttfile )
                                                                                                                                                                                                                                                                                                                If uttfile )
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            promptfile = fopen( promptfilename, "r" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      stropy( uttfilename, uttfname );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              uttFilename = new char( strien(uttFname) +1 );
                                                                                                                                                                                                                                                                   SOChammel_Close( uttfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // open charmet
SDCharmet Open( uttFile );
SDCharmet_Claim( uttFile, TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uttfile = SDCharmel_HewFile( uttfilename, "r" );
sssert( uttfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert(, promptfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( uttfile i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WindowsFileChannel::close();
    35
                                                                                                                           . P S of 17
                                                                                                                                                                                                                                                                          uttfile = 0;
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```
SD_UII WindowsfileCharmel::startUtt( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SD_UTT WindowsfileCharnel::peekUtt( )
                                                                                                                                                                                                                                                  // delete utterance in the charmed void WindowsfileCharmel::killUttt)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bool windowsfileCharmelizmotlfyCharmel( SD_CMANNEL ch, SD_CMANNEL_EVENT ev )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // turn channel on, if you need to.
bool WindowsfileChannel::listen( bool turnOn )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void WindowsFileCharmel::nextUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   notifyRoutine( uttfile, 80_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WindowstiveChannel::nextUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOCHannel Seek( uttfile, uttindex, SM BEGINNING );
return utfutt = SOCHannel_Read( uttfile, CM_MAITSIART[CH_WAITEND );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( utt() )
return utt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( uttlndex < 0 )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return channel Wason;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool charmel WasOn + chantsOn,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   essert( uttfile );
                                                                                                                                                                                                          if unt() ) (
                                                                                                                                                                                                                                                                                                                                                     return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (17 ev == SD_CHAMMEL_START )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( (chanison=turnon) i= 0 )
                                                                                                                                                   // Read the next utterance.
notifyRoutinet uttrile, SD_CHANNEL_START );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ((SD_CHANNEL_EVENT_NAMDLER ) portfyRoutine)( uttrile, SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if ( intinceming() )
                                                                                                                                                                                                                                                                                                                                                                                                            assert( uttfile == ch );
// stortUtt returns $D_UTT
return( stortUtt() i= 0 );
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                                                                                                                               DEAGGP GP 7-22-95 11:35a
                                                                                                                                                                                                                 יווטנו - 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WindowsCollectCharnel::WindowsCollectChannel( const char* uttingma, const char*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         $D_UTT WindowsCollectCharmel::startUtt()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // close channel
vaid WindowsCallectChannel::clase()
                                                                                                                                                                                                                                                                                                                                                            // Write utterance to file
void WindowsCollectChannel::outputUtt( UttChannel* uCh )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Open charmel for collection int WindowsCollection (SD_CNAMMEL_EVENT_NAMOLER speechEventHandler )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ** promptfname )
WindowsfileCharnel( uttfname, promptfname ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           indowsCollectChannel::'WindowsCollectChannel()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WindowsCollectChannel::close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( uttilename AB luttile ) {
  uttile = SOCharmel Heafile( uttilename, "w" );
  SOCharmel Open( uttile );
  SOCharmel_Claim( uttile, TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return utt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      head = point = 0;
tail = SIZE_UII_RING -1;
advance = 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( uttFile ) (
flush();
SDChernel Release( uttFile );
SDChernel_Close( uttFile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ii( iutifile || lWindowstiveCharmel::open( speechEventHardler ) ) (
    windowsfileCharmel::close();    return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           WindowstiveCharnel::close();
                                                                                                                                                                                                                                                                                                                  meent( uch += 0 );
                                                                                                                                                                                                                                                                              11( uch->utt() 1+ 0 )
    30
                                                                                                                                                                                                    uch-skillutt();
                                                                                                                                                                                                                                  SDCharmel_Write( uttFile, uCh->utt() );
      35
                                                                                                                               7age 6 of 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uttfile = 0;
        40
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```

```
void WindowsCollectChernel::flush()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SD_UIT WindowsCollectChannel::peekUtt( )
                                                                                                                                                                                                                                                             yold WindowsCollectChernel::purge()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void WindowsCollectChannel::nextUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int WindowsCollectChannel::incRead()
                                                                                                                                                                                                                                                                                                                                                                                                             oentotto);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return( chanison ? SDCharnel_Read( mic, CM_PEEK ) : 0 );
                                                                                                                                                                                                                                                                                                           point . head;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  point = includex( point );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( point=shead )
incNead();
                                                                                                                                                                        whilet (tail = incindex( tail )) i= head )
uttRing( tail j.killutt();
                                                                                                                                                                                                                                                                                                                                     tail * decindent tail );
                                                                                                                                                                                                                                                                                                                                                                  while (tall = incindex( tail )) i= head )
outputUtt( &(uttRing( tail )) );
                                                                                                                                                                                                                    ift utto )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     giveAwayUtt( &(uttRing( point )) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return head;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         il ( head on tail )
                                                                                                                  point a head;
                                                                                                                                              tail = decindex( tail );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        head * incIndex( head );
**nextIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               il ( ladvance )
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       point = teil )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int pnt = decIndex( point );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outputtiti &(uttRing( tail )) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tail a includext tail );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           advance . 1;
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                                                                                           DRAGOTP.CPP 7-22-95 11:35a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bool WindowsCollectChannel::canBackup( int numBack )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool WindowsCollectChannel::peekPrompt( char* buf, int bufSite, int promptwheed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :00/ . 1vd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return( space > mastack );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( promptsAhead > 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if ( promptsAhead == 0 )
30
                                                                                                        point . lestPoint;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      boot rin + TRUE;
                                                                                                                                                                                                                                                                                                       (1) (m)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for( int i=0; rtn && ispromptsAhead; ++i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int lestPoint - point;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assert( promptsAhead < SIZE_UTT_RING );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if ( prompt() || nextPrompt() )
                                                                                                                                                                                                                                                                     strncpy( buf, prompt(), bufSize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( point**head )
incHead();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return fALSE;
                                                                                                                                                                                                                              if( paint==head )
incHead();
                                                                                                                                                                                                giveAusylitt( &(uttRing( point )) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                strncpy( buf, prompt(), bufSize );
return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                            if( point==head )
  rtn &= WindowsLiveChannel::nextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                          point = includex( point );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   giveAwayUtt( &(uttRing( point )) );
                                                                                                                                                                                                                                                                                                                                                uttRing[ point ].giveAusyUtt( this );
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bool WindowsCollectChannel::nextPrompt()
                                                                                                                                                                                                                                        ))
bool windowsCollectCharmel::notifyCharmel( SD_CHANNEL ch, SD_CHANNEL_EVENT ev )
                                                                                                                                                                                                                                                                                                                                                                                                                                   bool WindowsCallectCharmel::listen( bool turnOn )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( point=shead ) {
   return WindowsLiveCharmel::nextPrompt();
                                                                                                                                                                                                                                                                                                                                          return( (chanisOn=turnOn) i= 0
7 SDChennel SetMicOn( mic, YES, NO )
: SDChennel_SetMicOff( mic ) );
                                                                                                                                                                                                                                                                                                                                                                                                               essert( mic );
                                                                                                                                                                                                         ( ev == SD_CHANNEL_SIART )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return( uttPrompt && "uttPrompt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       killutto;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int space = ( point > tail -1
} point > tail -1
; $12E_UTI_RING - tail + point -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uttRing( point ).giveAwayUtt( this );
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                point = lastPoint;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                strncpy( buf, uttRing( point ).prompt(), bufSize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 point += $12E_UTI_AING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         point . prompteBack;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int lastPoint = point;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( space < prompts8ack )
  return 0;</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uitRing[ point ].giveAusyUtt( this );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return 1RUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int promptsBack = -promptsAhead;
                                                                                                                                                                                    if ( ististening() )
                                                                                                                   uttUtt = SDCharrel_Read( ch, CH_WAIISIARI );
                                                                                                                                                    assect( mic am ch );
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                                                                                          DRAGOTP.CPP 7-22-95 11:35e
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // Delete utterance
void WindowsCollectCharnel::killUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WindowsAdaptChannel::'WindowsAdaptChannel()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void WindowsAdaptChannel::outputUtt( UttChannel* uCh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          vindowsAdaptCharmel::WindowsAdaptCharmel( const char* promptFname )
: WindowsCollectCharmel( 0, promptFname ) {    recog = 0; }
                                                                                                         if( recog->getVoc() != uCh->choices->recogVoc )
recog->eetVoc( uCh->choices->recogVoc );
                                                                                                                                                                                                                                                                                                                                                                                            ##### ( uCh != 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WindowsAdaptChannel::close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURT_Detered utt() );
                                                                                                                                                                                                                   if( recog ** 0 )
recog * new Recognizer( uch );
                                                                                                                                                                                                                                                                                                                                          if( uCh->choices->recogVoc ** 0 || uCh->choices->recogUser ** 0 ||
    uCh->utt() ** 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ise if( ev == SD_CHANNEL_BACKUP )
 30
                                                                                                                                                                   recog->setCharmel( uCh );
                                                                                                                                                                                                                                                                                          uch->killutt();
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    delete recog; recog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               advance = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( u )
SOURT_Delete( u );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SD_UIT u = SDChannel_Read( ch, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return( utt() i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return FALSE;
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uttUtt • 0;
                                                                                      Prop 8 of 17
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SD_VOC VocStateMachine::open( const char *name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool WindowsAdaptCharmel::open( SD_CHARNEL_EVENT_MANDLER speechEventHandler )
                                                                                                                          // save Vocabulary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void WindowsAdaptCharmel::close()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return setVoc( SDVoc_Open( name, "r+" ) );
                                                                                                                                                                                              state = NO_CURRENT_STATE;
                                                                                                                                                                                                                                                                                                                    return 0;
                                                                                                                                                                                                                                                                                                                                   ff( m2>f1 )
return (( *(m2+1) ** ':' || *(m2+1) ** '\\' || *(m2+1) ** '/' );
                                                                                                                                                                                                                                                                                                                                                                                  fit abift) = (s1-1) == ':' || *(s1-1) == '\\' || *(s1-1) == '/' );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 wilet elvfl & g2212 ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WindowstiveCharnel::close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           flush();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return 1;
                                                                                                                                                                                                                                    // always load the user then the voc, close the voc then the user
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for( comet cher "s1=f1; "s1; ++s1 );
for( comet cher "s2=f2; "s2; ++s2 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uCh->choices->isCont ? recog->contAdapt() : recog->adapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( recog->getUser() !* uCh->choices->recogUser );
recog->setUser( uCh->choices->recogUser );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if tolower( ist ) i= tolower( *s2 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WindowsAdaptCharmel::close();
return 0;
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                                                                                                      DRAGOP.OP 7-22-95 11:35a
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                                                                                                                                                                       // Get the right Vocabulary and set it for the recognizer SD_VOC VocStatoMachine::setVoc( const char* vname ) {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Close all vocabularies
void VocStateMachine::close( const char* name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void VocStateMachine::save( const char "name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ) // if(name)
else
v = voc;
                                                                                                                                                 So_voc_itemion iter;
                                                                                                                 10 A 20 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50_VOC v=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SDVoc_Save( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                ( 0 = 1 + ))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ii nee
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SO_VOC_ITERATOR iter;
                                                                                                                                                                                                                                                                SDVoc_Close( v );
                                                                                                                                                                                                                                                                                                                                                                                                           for( VocStatoMachine "vumevsmDeq.first(); vum; vumevum-»next() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SDVoc_Iterate( Liter );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char buf( 128 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       getVocame( buf, sizeof( buf ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          while( (v=SDVoc_Next( Liter )) (= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( fileNameCmp( buf, name ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( !fileHameCmp( name, buf ) ;
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             char buf( 128 );
size_t ten = $DVoc_GetfileName( v, buf, 128 );
assert( len <= 128 );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SDVoc_SaveAs( voc, name );
                                                                                                                                                                                                                                                                                                                                                                                  IT YEAR-DOOC = 4 V )
                                                                                                                                                                                                                                                                                                                             vam->etate # NO_CURRENI_STATE;
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// Get state in vocabulary
$D_STATE VocStateMachine::getState( const char* name, SD_STATE parent )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Get name of Vocabulary int VocStateMachine::getVocAmme( char* buf, int sizebuf, SD_VOC viest )
                                                                                                                                 ::::5:::5
                                                                                                                                                                                                                                                                                             //void VocStateMachine::updateState( SD_WORD hWord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // set vocabulary return setVoc( v );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Loop through all known Vocs and compare their name with
white( (v=50Voc_Next( &iter )) != 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SDVoc_Iterate( &iter );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int index * -1; /* will be 0 after first line... */ do (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char astatemane [256];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             iff sizebuf )
buff 0 1 = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( viest in 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( viest as 0 ) viest a voc;
                                                                                                                                                                                                                                                                                                                                                return parent;
                                                                                                                                                                                                                                                                                                                                                                                 white { name [index] ** '.' );
                                                                                                                                                                                                                      state - SDS:Mach_Updatet voc. state, hWord, YES );
     5
                                                                                                                                                                                                                                                           assort( state );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return SDVoc_GetfileName( vTest, buf, sizebuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // if yname is found, break out of loop
if( !fileHameCap( yname, buf ) )
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char buff 128 );
size_t len = $50'oc_GetFileHume( v, buf, 128 );
assert( len <= 128 );
                                                                                                                                                                                                                                                                                                                                                                                                                     parent = SDState GetMandle( voc, astatename, parent );
if ( iparent ) break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ndex += strien( sataten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       first time: Index<-0; Others: go past '.'
Reed through the eng, up to the maxt period or the end.
Put test in astatement.
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                                                                                                                DIACOP.CP 7-22-95 11:35e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "X['.]", astatename );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Is word active
bool VocStateMachine::word!sActive( SD_MDRD hWord )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             //void VocStateMachine::updateState( const RecogResult* res )
//(
                                                                                                                                                                                                                                                                     // Add State within state void VocStateMechine: include State( SD_STAIE state(oinclude ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3::::::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Create new state
SD_STATE vocStateMechine::newState( const char *newStateMemm )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return info. isInState & info. isActive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ussert( voc );
ussert( hWord );
ussert( state to NO_CURRENT_STATE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SDState_GetWordInfol( voc, state, hWord, &info );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SO_STATE_WORD_INFO! info;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     assert( newStateMame );
assert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SD_TRANSITION tran=SDState_GetWordTransition( voc, getState(), hWord_);
                                                                                                                                                                                                                                                                                                                                                              return hState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SD_STATE hState+SDState_GetHandle( voc, newStateHamm, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return( tran.args.jmp.destState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       essert( wordlsActive( hWord ) );
                                                                                                                                                                                                                                                                                                                                                                                           if( hState ) SDState_SetName( voc, hState, newStateHame );
                                                                                                                                                                                                                                                                                                                                                                                                                                   hState = SDState_New( voc. 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( hState ) return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( tran.OpCodel=JNP ) return 0;
                                                                                                                                                                           $\texts_AddState( voc, getState(), stateToInclude, (uint)(-1) );
                                                                                                                                                                                                                assert( getState() );
                                                                                                                                                                                                                                                 assert( stateloinclude );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( state );
assert( res );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int rWords = res->wordCount();
for ( int j=0; j < rWords; j++ ) {
    state = SDSIMECh_Update( voc, state, res->wordid(j), YES );
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// Get first SD WDRD handle of state
SD_WDRD VocStateMachine::firstWordId( SD_STATE at )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Delete state void vocStateMachine::deleteState ( SD_STATE hState )
                                                                                                                                                             // Let nih word 10 in state
sp word vocstatemachine::nthwordid( long index )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( flag ) setState( (SD_STATE) 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int flag = ( hStates=getState() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // usingWordIterator = -1 none, 0 state0, state
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SD_WORD hWord * 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOState_Delete( voc, hState);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( voc );
assert( hState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return hWord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          it( hWord ## 0 )
stateOffterator # -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    stateOfliterator = st;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( st == (SD_STATE)(-1) ) st = getState();
                                                                                                                                                                                                                                                                                                                                                                                                else if( stateOffiterator != (unsigned ):1 )
hWord = SDState_MextWord( EstateWord(terator );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SO_WORD hWord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       il( st == 0 )
                                                                                                                                                                                                                                         return hWord;
                                                                                                                                                                                                                                                                              if( hVord == 0 )
stateOffterator = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( stateOfficerator ** 0 )
hword = SDWord_Mexit &stateOwordIterator );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOSIBLE_IterateWords( voc. st. &stateWordIterator );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hword . SDState_MextWord( AstateWordIterator );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hword a SDWord_Mext( &stateOworditerator );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SDWord_Iterate( voc. &stateOWordIterator );
                                                                                                                                                                                                                                                                                                                                         hword . 0:
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                                                                                                                                   DELAGOPP.OPP 7-22-95 11:35e
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // List words (SD MORD) in state
void VocStateMachine::listState( long numioList, FILE* file )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #define NAXMORD 256
                                                                                                                                                                                                                                                                                                                                                                                                                                       \label{eq:printf} \mbox{printf(file, "NO MODELS for: Xs. Xlu\n", wordbuf, (long user) insigned ) halord ):}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            il( file == 0 )
file = stdout;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // If there are no states in the Vocabulary iff state == 0 ) SDNord_List( voc, index, Shword, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SO_WORD hWord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     assert( state is NO_CURRENT_STATE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return hWord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SD_WORD hWord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SD_STATE hState = getState();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    char wordbuf[ MAXWORD ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // There is no state in Vocabulary
if( hState == 0 )
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOState_ListWords( voc, state, SD_ORDER_ALPHA, index, Whyprd, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( manifelist ) (
while( namioList -- && (hword=SDWord_Mexit &it )) != 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SO_WORD_ITERATOR IT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOWord_Iterate( voc, &it );
                                                                                                                                                                                                                                                                                                                                            unsigned i = 0;
uhile( (hWord=SDWord_Next( &it )) (= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SDWord GetHamme( voc, hHord, wordbuf, MAKWORD );
SD WORD HATD worddinfo;
SDWord Zetlinfo( voc, hHord, &wordinfo );
if( wordinfo, hasWord) )
tprintf( fite, "%s %tu\n", wordbuf, (tang unaigned )hHord )
                                                                                                                                                                                                                                                                                                             ( i > 15000 )
                                                                                                                                                                                                                            tprintf( file "
                                                                                                                                                                                                                                                                      11( 1 = 16800
      35
                                                                                                                                                           tprintf( file, "16600 multiple: %d\n", 1 ;; ie if( i == 16600 )
tprintf( file, "16600 multiple: %d\n", i );
                                                                                                                                                                                                                                       "16800 multiple: %d\n", 1 );
                                                                                                                                                                                                        "16600 multiple: Xd\n", 1 );
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```

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// Count number of words in vocabulary tong VocStateMachine::wordCount()
                                                                                                                                                                                                     ) // while
) // else
) // else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SO_STATE_WORD_ITERATOR IT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDState_IterateWords( voc, hState, &it );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // There are states in vocabularies
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hile( numiotist - && (hWord=50State_HextWord( &it )) i= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                    hile( (hword=SDState_Mentword( &it )) I= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    spliend letinic voc. hword, swordinic );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Get word and check for model
SDWord_GetHame( voc; hword, wordhuf, MAXWORD );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               else iff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 else if( i == 16200 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tprintf( file, "NO MODELS for: Xa\n", wordbuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SDWord GetHamme( voc. hWord, wordbuf, MAXWORD );
SD WORD HWFO wordinfo;
SDBord GetInfot voc. hWord, &wordinfo );
If( wordinfo.heaModet )
fprintf( file, "* Ka\n", wordbuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            iff ( == 15000 )
iff ( == 15000 )
iff ( == 15000 )
                                                                                                                                                                                                                                                                           (printf( file, " %s\n", wordbuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (printf( file, " %a\n", wordbuf );
                                                                                                                                                                                                                                                                                                                if( wordinfo.hasModel )
fprintf( file, "" Ks\n", wordbuf );
                                                                                                                                                                                                                                                                                                                                                    splord Catinfo( yoc, hyord, Lwordinto );
                                                                                                                                                                                                                                                                                                                                                                                    SOWORD GetBase( voc. huord, wordbul, MAXWORD );
10
                                                                                                                 DEAGGP . CPP 7-22-95 11:35a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "La \n", wordbuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "16000 multiple: Xd\n", i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "16200 multiple: Xd\n", i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     *15400 multiple: %d\n", i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15200 multiple: Xd\n", i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15600 multiple: Xd\n", i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15800 multiple: %d\n", i );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Check whether word has a model bool VocStateMachine::wordMasModel( SD_WORD w )
                                                                                                                                                                                                                                                                                        // Add a word to the state,
sb_wbib VocStateMachine::addWord( const char* s )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Add word to vocabulary
_WORD vocStateMachine::addMord( SD_WORD w )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SD WORD INFO wordinfo; if{ in } return 0; SDWord GetInfo( voc. w. Mwordinfo ); return( wordinfo.hasModel (= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( state 1= NO_CLERENT_STATE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return info.mwords;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SDState_GetInfol( voc. state, &info );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SD_SIATE_INFO! info;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             essert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SD_SIATE_WORD_INFO! winfol;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( state *= 0 )
                                                                                                                                                                                                                                                   assert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                            SOState_AddWord( voc, st, w );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // Do not add word if it is already in state if( winfol.isinState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SDState_GetWordInfol( voc, at, w, &winfol );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aggert( st );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SD_SIATE st . getState();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     assert( voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         asser(( w f= 0 );
                                                                                                                                                                                                                                                                                                                                                                            return w;
                                                                                                                                                                                                               SD_WORD w = SDWord_GelHandle( voc. 8 );
                                                                                                                                                                               17( W==0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SD_VOC_INFO vinto;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SDVoc_Gettnfo( voc, &vinto ):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return vinto.miords;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return w;
                                                                                                                                     w = SDWord Hew( voc. & );
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// Detete word from vocabulary, being given SD_WORD boal VocStateMachine::deleteWord( SD_WORD w )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // phrase building
50_WDBD vocSteteMachine::buildWord( const char* spelling, const char* phrase )
                                                                                                                                                                                                                                                                                                                                                                                         return addrord( w );
                                                                                                                                                                                                                                                                                                                                                                    return w;
                                                                                                                                                                                                                            SD WORD INFO winto;
SDWord_Getinfo( voc. w, &winto );
                                                                                                                                                                                                                                                                                                                                                                                                                                                               delete phrCpy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // build word 10 for phrase, and return SD_WORD we SDword_Buildrow( voc. spelling, 0, 0, nwords, phrtpy, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           while( (*pc = *p) 1= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int rewords . 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      char 'p = (char' )phrase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              char *pc * phrCpy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  char "phrCpy = new char( strient phrase ) +1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          assert( spelling );
// phrase a words seperated by spaces mult terminated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return addlord( w );
                                                                                                                                                                           if( winfo.stateRefCount >= 1 )
winfo.stateRefCount -= removeWordfromState( u );
                                                                                                                                       if winto.stateRefCount == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // string of words not seperated by spaces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ite is d. | ... ./.. | d. ... ./v. )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( *p == ' ' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             *pc = '\0';
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           **rWords;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             while( ***p as ' ' );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ,0/; = 2d.
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                                                                                                              DRAGGP.GP 7-22-95 11:35e
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  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Open USEB file
SD_USER UserPhonetics::open( const char *name )
{
                                                                                                                                                                                                                                                                                                  // Set user
SD_USEA userPhonetics::setUser( SD_USEA u )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Delete word from state
bool VocStateMachine::removeWordfromState( SD_WDRD w )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Detete word from vocabulary, being given name of word to delete
bool vocStateMachine::deleteWord( const char* s )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // Delete word from state
bool VocStateMachine::removeWordfromState( const char* s )
                                                                                                                                                                                                                                                                                                                                                                                 return setUser( SDUser_Open( name ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SD STATE word_THFO1 winto;
SDState_Getwordinfo1( voc, getState(), w, &winto );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //Get SD WORD for word name
SD WORD we word!d( s );
// Delete SD WORD from vocabulary
return( w ? deleteword( w ) : 0 );
                                                                                                                                                                                        Her e n;
                                                                                                                                                                                                                                                                                                                                                                                                                         \ensuremath{//} always load the user then the voc, close the voc then the user assert( name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return( w 7 removeMordfromState( w ) : 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SD_WORD w = wordid( s );
                                                                                                                                                      return wer;
                                                                                                                                                                                                                                                                  if( activeUser 1= u )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f( winfo. is inState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return 0;
                                                                                                                                                                                                                              SDUser_SetCurrent( activeUser = u );
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SDState DeleteMord( voc, getState(), w ); return T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SDWord Deletel voc, w );
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// Set user
SD USER UserPhonetics::selUser( const char* name )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Save user file
you'd UserPhonetics::save( const char *name )
                                                                                                                                                                                       // Close user file void UserPhonetics::close( const chare name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Get name of loaded user int UserPhonetics::getUsername( char* buf, int sizebuf, SD_USER ulest )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SD_USER_HERATOR iter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return setUser( u );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDUser_Iterate( Biter ); uhile( [u=SDUser_wext( Biter )) (= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           assert( user );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   iff sizebut )
buff 0 ) = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               iff ulest == 0 ) ulest = user;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assert( name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   il( ulest 1= 0 )
                                                                                                                                                         :0=n 8350 05
                                                                                                                                                                                                                                                     SDUser_Save( user );
                                                                                                                             if ( name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 200
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return SDUser_GetfileHame( ulest, buf, sizebuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char buff 128 ); size t len * SDiser GetfileName( u, buf, 128 ); asseri( len * 128 \Sigma;
                                                                                                                                                                                                                                                                                                                                                                                                             getUsername( buf, sizeof( buf ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                               cher buf! 128 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( !fileNameCmp( name, buf ) )
break;
                                                                                                                                                                                                                                                                                                                                                                                 if( "but && fileHemeCap( buf, name ) )
                                                                                                                                                                                                                                                                                                                   return;
                                                                                                                                                                                                                                                                                                                                               SDUser_SaveAs( user, name );
10
                                                                                                          DEAGGP CPP 7-22-95 11:35a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Jump Transition based on Word SD_STATE Recognesuit::jmpTransition( int i ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int RecogResult::getHame( cher* textbuf, int sizebuf ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  else
u = user;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( ithis ) (
if( tentbuf & sizebuf ) *tentbuf='\0';
return 0;
                                                                                                                                                                                                                                                                                                                                                                     essert( iswordCount() );
                                                                                                                                                                                                                                       return( bulpos · textbul );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cher *bufpos * textbuf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( u 1= 0 )
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for( UserPhonetics *up=upDeq.first(); up; up=up->next() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      white( (u*SDUser_Next( Siter )) i* 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SDUser_Iterate( Liter );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SD_USER_ITERATOR iter;
                                                                                                                                                                                                                                                                     if( j+1 < niords )
4( bufpos - 1 )* '; // Put space between words.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOUser_Close( u );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( activeUser == u ) activeUser = 0;
                                                                                                                                                                                                                                                                                                                        ii( bulpos · textbul > sizebul )
bulpos · textbul + sizebul;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( up-suser ** u ) up-suser * 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            char buf( 128 );
size t len = SDUser GetFileHame( u, buf, 128 );
assert( len <= 128 );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( !fileHameCmp( name, buf ) )
break;
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// Set the user models
SD_USER Recognizer::setUser( const char* vnume )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Recognizer:: Recognizer()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Constructor for Recognizer class
// You need a charmel to construct this class
Recognizer: Recognizer ( UtCharmel* recogch )
: userPhonetica(), vam() {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Open a vocabulary
SD_VOC Recognizer::setVoc( const char *name )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50 !RANS!!!OM tran=SDState_GetWordTransition( vocID(i), stateID(i), wordId(i
s+ ) ");
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         channel = 0;
setUser( (SD_VOC )0 );
setVoc( (SD_VOC )0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             esseri( name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              channel = recogCh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return( tran.args.jmp.destState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                       return v;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SD_VOC v = vsm.setVoc( name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             selPars();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( recogCh );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ill tran.OpCodel=JMP ) return 0;
                                                                                                                                                                                                                                                                                                   SD_USER u = userPhonetics.setUser( vnamc );
                                                                                                                                                                                                                                                                                                                                        assert( where );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11( 4 := 0 )
                                                                                                                                                                                                                                                                ( C :: 0 )
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   v * vsm.open( name );
                                                                                                                                                                                                                            u = userPhonetics.open( vname );
                                                                                                                                                                        if( u i= 0 && vsm.voc i= 0 )
vsm.loadPhonetics();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( userPhonetics.user != 0 && v != 0 )
vsm.loadPhonetics();
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                                                                                                                              DIAGOP.OP 7-22-95 11:35.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Usualty we pass nothing extra. The recognition is done
// from the sel state. It is possible to pass in an extra list
// of words that do not belong to the state your recognizing
// from, but that you want the recognizer to consider.
SD_REJCODE Recognizer::recog( AC< SD_MORD > *passThru )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Discrete Recognition call
// Default passibru is 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :
:-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ţ
                                                                                                                                                                                                                                                                                                                                                                                    :
                                                                                                                                                                                                                                                                                                                                                                                                                   .
                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30_U11 u;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assert( charmet );
essert( vsm.voc );
essert( vsm.getState() != NO_CURRENI_STATE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return u;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( (u=channel->startUtt()) I= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             userPhonetics.active();
                                                                                                                                                                                             Aturn 1;
      30
                                                                                                                                                                                                                                                 return( irin );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Recognition function called from SDAPI level.
// This function is not provided with VoiceTools
int rtn = SDState_Recogn(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      charve!->choices->isCont = 0;
charve!->choices->recogStatus.+Choices = 0;
charve!->choices->recogUser = getUser();
                                                                                                                                                                                                                                                                                    channel - renditt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( passihru )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recogPars.pPassThru = &( (*passThru)(0) );
recogPars.nPassThru = passThru->count();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recogPars.pPassThru = 0;
recogPars.rPassThru = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1/ VOC
                                                                                                                                                                                                                                                                                                                                                                                                                     // sizeof list
                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Choice list
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // State
                                                                                                                                                                                                                                                                                                                                                                                  // Recognition parameters
                                                                                                                                                                                                                                                                                                                          // Recognition Status structure
      35
                                                                                                                              Page 15 of 17
                                                                                                                                                                                                                                                                                                                                                                                                                                      sizeoi( channel->choices->recogiesults )
                                                                                                                                                                                                                                                                                                                                                             E(charmel->choices->recogStatus) 1;
                                                                                                                                                                                                                                                                                                                                                                                                     trecogPare,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // User ( charmel->choices->recoglesuits[ 0 ] )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         channel->choices->recogState = getState(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              charmet->choices->recogVoc = getVoc(),
          40
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```

```
// Adapt models for discrete recognition SD_REJCODE Recognizer::adapt()
                                                                                                                                                                                                                                                                                                                                                                                                                // collect utterances, given a prompt SD_REJCODE Recognizer::collect() (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                end i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #11de1 DEBUG
                                                                                                                                                                                                                                                                                                                                  assert( charmel >;
assert( charmel > uttPrompt );
assert( charmel > uttPrompt(0) );
assert( charmel > utt() == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           iff uttPrompt LL *uttPrompt )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      const char "uttPrompt = charmet->prompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           userPhonetics.active();
                                                                                                                                                                                                                                                        in 110,05
                                                                                                                                                                                                                                                                                                 userPhonetics.active();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              essert( charmel );
assert( vsm.voc );
                                                                                                                                                                                                                   if( (u=channel->startUtt()) I= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( w == 0 )
return 1;
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SD_UIT u;
SD_REJCODE rejCode;
if{ (wechannel:>etartUtt()) i= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SD_WORD w = wordld( uttPrompt );
                                                                                                                                                                               SD_UII_INFO utttnfo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return rejCode:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( adaptim ) {
   if( thword=SDWord_GetHandle( vsm.voc, uttPrompt )) i= 0 )
   SDWord_Adaptim( vsm.voc, hWord, &adaptim*ere );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SO_WORD hVord;
                                                                                                                                          channel-rehoices-risCont = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else (
// FUTURE: Optionally add word to vocabulary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDWord_Adapt( yes.voc. 1, uttPrompt,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 channel - rendutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                printf( "\"Xs\" not in vocabulary.\n", uttPrompt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return 1;
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 &trainPare, &( charmel->choices->trainStatus ),
&rejCode );
                                                                                                                DENGCOP .COP 7-22-95 11:35e
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SO_REJCODE Recognizer::contRecog( int maxWords, int minWords )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // check whether word is trained boot Recognizer::word!afrained( const char a )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // check whether word is trained boot Recognizer::word!sfrained( SO_WORD w )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SD_WORD_INFO wordinfo; SD_WORD_INFO wordinfo; SD_WORD_INFO WORDING WILLIAM O; SD_WORDING OFTHING ( van.voc, w, &wordinfo ); return( wordinfo istrained != 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SD WORD INFO wordinfo;
if( in § return 0;
SDWord Getlinfo( van.voc, w, &wordinfo );
return( wordinfo.istrained i= 0 );
                                                                                                                                                                                                                                                                                                                     30_UTT u;
                                                                                                                                                                                                                                                                                                                                                                           charmel->choices->recogStatus.mchoices = 0;
charmel->choices->recogNoc = v;
charmel->choices->recogState = st;
charmel->choices->isCont = 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               so state at + getState();
satert( at i+ NO_CURRENI_STATE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SD_VOC v = getVoc();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               essert( charmel );
                                                                                                                                                                                                                                                                                                                                                            charmel->choices->recogUser = getUser();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            userPhonetics.active();
                                                                                                                                                                                                                                                                              if( (u=charmel->startUtt()) (= 0 )
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         channel->choices->recogüser = getUser();
channel->choices->recogVoc = getVoc();
channel->choices->recogState = getState();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               channel -> endut(();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SDULL_Collect( u, Euttinfo );
                                                                                                                                                                                                                                       if( maxWords == 0 && minWords == 0 )
                                                                                                                SOState_ContRecogt v, sMach u, choices->recognesuits[0]),
                                                                                                                                                                             SD_STATE_MACHINE strach = $0$trach new( v, st );
// driver function_not surfaced in $0API
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```

```
// Adapt models
SD_REJCODE Recognizer::contAdapt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            const cher *uttPrompt * charmet *>prompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     userPhanetics.active();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ssert( vam.voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                         if ( uttPrompt && "uttPrompt )
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              channel - renduct();
                                                                                                                                                                                                                                                                                                                                                for( cher *sestr; *s; **s )
                                                                                                                                                                                                                                                                                                                                                                                                                  char serf UTT_PROMPT_LENGTH 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return (resultCount();
                                                                                                                                                                                                 SD_REJCODE rejCode;
if{ (wechannel->startUtt()) != 0 )
                                                                                                                                                                                                                                                                                                                                                                       int rwords:1;
                                                                                                                                                                                                                                                                                                                                                                                             memcpy( str, uttPrompt, UTT_PROMPT_LENGIN );
                                                                                                SD_WORD huord;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SDS: Mach_Delete( stMach );
                                                                                                                              channel - vendutt();
                                                                                                                                                                                                                                                                                                                         (1, .***, ))
                                                                                                                                                                                                                                                                                          *m*'\0':
                                                                                                                                                                                                                                                                    white( isspace( *(s-1) ) )
 10
                                                                      DRAGGPP.GPP 7-22-95 11:35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aizeof( channel ->choices ->recogResults ),
(RECOG_PARAMETERS* )&recogPars,
(RECOG_STATUS* )&(channel ->choices ->recogStatus)
 15
                                                                                                                                                                                                                                                                    :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #ifdef DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return 1;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return rejCode;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( adaptim )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( (hword-Soword GetHandle( vsm.voc, uttPrompt )) i= 0 )
Soword_Adaptim( vsm.voc, hword, &mdaptimPara );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       printf( "\"%s\" not in vocabulary.\n", uttPrompt );
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                                                                   Page 17 of 17
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```
#include "seq.h"
#include stadef.h>
#include das.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void SeqBase::addFirst( StinkBase* list ) (
    // inserts this BELOW the newltom;
    ( (list-yeartlink = f) == 0
    7 (lif=list)
    ; (f-tist) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void Sembase::addtast( SLinkBase* (ist ) (
// inserts this BFLOW the last()
(f( | == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void StinkBase::addBest( StinkBase* newItom ) (
   // this is in the list, newItom is inserted at this's next
   assert( newItom in 0 );
                                                                                                                                                                                                                                                                                                                                                                                                void SeqBase::addMext( SLinkBase* list, SLinkBase* newitem )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void SegBase::addPrev( SLinkBase* list, SLinkBase* newitem )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        newitem- >nextlink=nextlink;
nextlink = newitem;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Copyright (c) 1991-1995 by Dragon Systems, Inc
                                                                                                                                                                                                                                                                                                                                               if( list==| )
add(sst( new|tem );
                                                                                                                                                                                                           StinkBase "link;
                                                                                                                         if( (link=f) == list )
addfirst( newItem );
                                                                                                                                                                           assert( list );
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   list->nextlink = 0;
l->nextlink = list;
l = list;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq.cpp
base classes to manage singly linked list.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       assert( f == 0 );
addFirst( list );
                                                                                                                                                                                                                                                                                               list->eddMext( newItem );
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                                                                                                        $60.0PP 7-22-95 11:36a
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                                                                                                                                                                                                                                                                                                                                                                                                   // void SeqBase::sort( SLinkCompare compare ) {
//)
                                                                                                                                                          bool SegBase::sorted( SLinkCompare compare ) (
SLinkBase *list=f;
disert(list != 0);
                                                                                                                                                                                                                                                                                                                                                 BUE DEBUG
                                                                                                                                                                                                                                                                                                  void SegBase::remove( StinkBase* list )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #if DEBUG
list->nextLink = 0;
#endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               StinkBase *link;
                                                                                                                     2 :
                                                                                                                                                                                                                                                             for( $Linkbase *list=f; list; list=list->nentlink ) **i;
return f;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             assert( list );
assert( f );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if (linksf) == list)
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         while ( link->nextLink != list )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( (falink->nextLink) == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          while( link->nextLink i= list )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (((link-onextlink=list-onextlink) == 0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     doMext( link, newltem );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( ! == list );
t = link;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( | == list );
{ = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      link=link->nextLink;
essert( link );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          link=link->neatlink;
essert( link );
     35
                                                                                                    700 1 of 5
         40
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```

```
class HeahSegBase
                                                                                                                                                                                                                                                                                                                                                                                              protected:
                                                                                                                                                                                                                                                                                                                                                 <u>:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hnol SeqBase::validateSeq()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void SeqBase::removeAll()
(
                                                                                                                        unsigned arraySize;
unsigned arrayUsed;
                                                                                                                                                                virtual int compare( const StinkBase*, const StinkBase* ) const = 0;
                                                                                                                                                                                                StinkBase* remove( const StinkBase* v );
                                                                                                                                                                                                                        StinkBese* find( StinkBase* v );
                                                                                                                                                                                                                                                 SlinkBase* add( const SlinkBase* v );
                                                                                                                                                                                                                                                                                            // constructors
HanhScoBase( unaigned initialSize = 64 );
// destructors
'MashSeqBase();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for( StinkBase* d = f; d )= 0; d = d->nextlink )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( f == 0 ) return( | == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StinkBase *d, *nextl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for( d = 1; d 1= 0; d = next( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            while( list->nextLink 1= 0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( d->nextLink == 0 )
return( l == d );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( d == d->nextLink )
return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d. setHent( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nextl = d->nextlink;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               listalist mexicial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       iscompare( list, list->next(ink );
                     10
                                                                                                  KO.079 7-22-95 11:36e
                   15
               20
            25
                                                                                                                                                                                                                           SLinkBase** MashSeqBase::next( SLinkBase** pp ) const
                                                                                                                                                                                                                                                       #endif
#if DEBUG || UNIT_3
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLinkBase** MashSeqBase::(ast() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #endif
#if DEBUG || UNIT_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 StinkBase** MashSeqBase::first() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #11 defined(_DMI32_)
return( pp=array #4 pp;array=arraySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inline bool HashSeqBase::inArrayBounds( SLinkBase** pp ) comet
                                                                                                                                                                if( (*pp)->next(ink )
return &( (*pp)->next(ink );
                                                                                                                                        () ( | InArrayBounds( pp ) )
                                                                                                                                                                                                            return pp;
                                                                                                                                                                                                                                                                                                                                                white( (*pp)->nextLink )
pp = &( (*pp)->nextLink );
         30
                                                                                                                                                                                                                                                                                                                                                                                      ( Yearse odd 77 db. );
                                                                                                                                                                                                                                                                                                                                                                                                                                        if( arraydeed as 0 )
                                                                                                                                                                                                                                                                                                                                                                                                    for( SLinkBase** pp = array*arraySize-1; pp>=array && f*pp; --pp );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return( fP_SEG(pp)==FP_SEG( array ) && pp>=erray && pp<array=arraySiza );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #ifdef DEBUG
int checkCount() const;
#endif
                                                                                                          pp = array + ( keyHash( *pp ) & (arraySize -1) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    virtual unsigned keyHash( const SLinkBase* ) const = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    StinkBate** array;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unsigned numblinks;
        35
                                                                                                                                                                                                                                                                                                                                                                                                                                      return 0;
                                                                             Page 2 of 5
        40
     45
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```

```
StinkBase" MashSeqBase::edd( StinkBase" v )
                                                                                                                                                                                                                                                                                                                                                                                                                                          #endif
### DEBUG || UNIT_S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SLinkBase** HashSeqBase::prev( $LinkBase** pp ) const
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #endif
                                                                                                                                 else
..arrayused;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             assert( pp i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return( pp < ppe ? pp : 0 );
                                                                                                                                                                                                                                                                                     unsigned hash * keyHash( v ) & (arraySize-1);
                                                                                                                                                                                                                                                                                                                       if( rumStinks > arraySize && arraySize < arrayMaxSize )
growArray();</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               while( .. pp> array && !*pp );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for( StinkBase **ppe=array*arraySize; **pp<ppe && (*pp; );
                                                                                                                                                                                                                                                      if( array( hash ) is 0 )
                                                                                                                                                                                                                                                                                                                                                                        white( (*pp)->nextLink )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( pp < array )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( linArrayBounds( pp.) )
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pp = &( (*pp)->next(ink );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               StinkBase **link = array + ( keyHash( *pp ) & (arraySize -1) );
                                                                                                                                                                                       for( $LinkBase *pmarray! hash 1; p; p=p->next() )
  if( !compare( v, p ) )
  return p;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return link;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( pp >= array && pp < array+arraySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               while( (*link)->nextLink i* *pp )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              link = &( (*link)->nextLink );
assert( *link );
10
                                                                                                      SEQ.079 7-22-95 11:36a
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                                                                                                                                     #endit
#ir DEBUG || UNIT_B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SLinkBase* HashSeqBase::find( const SLinkBase* v )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #endif
#if DEBUG || UNIT_7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #endif
#if DEBUG || UNIT_6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HashSeqBase:: MashSeqBase( unsigned maxSize, unsigned initialSize )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else (
arraySize = 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unsigned hash = keyHash(v) & (arraySize -1);
                                                                                                                                                                                                                                                                                                                       'array = new SlinkBase*[ arraySize ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( initialSize <= 0 )
arraySize = 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return v;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               v·>nextLink = array( hash );
                                                                                                                                                                                                                        numStinks = 0;
                                                                                                                                                                                                                                                        arrayused . 0;
                                                                                                                                                                                                                                                                                   memset( array, 0, arraySize * sizeof( StinkBase* ) );
                                                                                                                                                                                                                                                                                                                                                      assert( arraySize < UINI_MAX/sizeof( void* ) );
                                                                                                                                                                                                                                                                                                                                                                                                    errayMaxSize = { maxSize > arraySize } 7 maxSize : srraySize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               array( hash ) = v;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( array( hash ) is 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 **numSLinks;
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( arraySize < initialSize ) arraySize<<=1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return p;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for( StinkBase *prarray( hash ); p && compare( v, p ); prp->next() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( unsigned iminitialSize; i>>=1; arraySize<<=1 );
   35
                                                                                                 Page 3 of 5
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```

```
#endit
#if DEBUG || UNIT_9
                                                                                                                                                                                                                                                                                                                                      yold MashSegBase::growkrray()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              StinkBase* WashSeqBase::remove( const StinkBase* v )
(
                                                                                                                                                                                                                                                                                                if( arraySize >= arrayMaxSize )
  return;
                                                                                                                                                                                                                                         StinkBase** oldArray = array;
                                                                                                                                                                                                                                                                    unsigned oldSize = arraySize;
                                                                                                                                                                                                                                                                                                                                                                                                                                     return 0;
                                                                                                                                memset( array, 0, arraySize " sizeof( StinkBase* ) );
                                                                                                                                                           assert( array );
                                                                                                                                                                                     erray = new StinkBase*[ arraySize ];
                                                                                                                                                                                                                 erraySize con 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              StinkBose *prorray( hosh );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unsigned bash = keyHash( v ) & ( arraySize -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                f plext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or( StinkBase "pHext = p->next(); pHext & v i= pHext; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11( v : p )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    p->nextLink = 0;
Bendit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       prese m prese-voest();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #if DEBUG
pMext->nextLink = 0;
#endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       p->nextt int a pleat->nextt ink;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return p;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return pitext;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·· numšt inks;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            · numSLinks;
10
                                                                                      SEO.CPP 7-22-95 11:364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #endif
#if DEBUG || UNIT_10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unsigned stringHash( const char* a )
                                                                                                                                                                   for( unsigned hash=0; *s; s++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   delete () oldArray;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       numStinks = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( unsigned i=0; i<oldSize; ++i )
 30
                                                                                                                                           hash .. (unsigned) .s;
                                                                                                                   hash .= randlable( hash & Oxff );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( StinkBase* stb=oldArray[ i ]; slb;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       $LinkBase* slbmext = slb->next();
add( slb );
slb = slbmext;
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```

5	Re			return cotesnumStinks; hendii	<pre>#if OEBUG int MashSeqBase::checkCount() const (</pre>	return hash; } Bendif
15	560,079 7-22-95 11:36a				st ( ; penext(p) )	
20						
25				 		
30		à				
35						
40	Page 5 of 5		ji tejaka se	era (15 e e espe A paresporte e co		
45						
<b>50</b>						

```
Bdefine BLACK

#define DARKSED

#define DARKSREEN

#define DARKYELLOW
                                                                                                                                                                                                                                                                                                                               #include sinclude syindows.h>
#include syindowsx.h>
//#include common.h>
#include common.h>
#include common.h>
#include common.h>
#include symbol
                                                                                                                                                                                                                                                                                                     include "elidecti.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The drawing dimensions of all the components of the height of the window. This keeps the slide to avoid drawing errors, all internal routines size (10x10) even if the actual window is small
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               We also store the number of tic marks (less ove) in the window extra
data area since this is complicated to compute so we do not want to
compute it every paint operation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       When we have the focus, we draw a flashing image over the slide
control. If the mouse is down, we move the flash image to correspond with
the current mouse position. The Flashiste stored in the vindou extra
data area represents the current flash state and position as follows:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 00 (151:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The current position, minimum position and amainum position are also stored as variables in the window extra data area.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Note that we have three different representations of horizontal location:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (C) Copyright Dragon Systems, Inc. 1993-1994
All Rights Reserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROJECT: DragomDictate for Windows ·· Custom Controls CREATED: February 4, 1994
AUTHOR: Joel Gould
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .. DRAGON SYSTEMS CONFIDENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    stidectl.cpp : dragon horizontal stide control
       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pixel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FlashState - 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          offset
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    posicion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       imensions of all the components of the silder are based on
the window. This keeps the slider itself well proportioned.
Ing errors, all internal routines assume a minumum window
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    integer between sinings range value and maximum range
value inclusive which is how the dialog box sees the
alider position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ectual horizontal pixel offset from the left edge of the window
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               normalized position with the leftmost (minimum) value set to zero
  10
                                                                                                                                                       no flash drawn
draw flash over offset FlashState
                                                                                                                                                                                  2200
                                                                                                                                                       7.23.3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    const COLORREF backgroundColor * WHITE;
const COLORREF high (ightColor = WHITE;
const COLORREF bandouColor = BLACK;
const COLORREF bandouColor = BLACK;
                                                                                                                                                                                          // minimum distance between tic marks inline int minifoblat( int height ) ( return height; )
                                                                                                                                                                                                                                                       // top row of the horizontal groove inline int groovelopt int height \circ ( return height \circ 1 / 3 - 1; )
                                                                                                                                                                                                                                                                                                                                       // height of slider pointer
inline int markHeight( int height) ( return height * 2 / 5; )
                                                                                                                                                                                                                                                                                                                                                                                                               // height of tic merts inline int tickeight ( int height ) ( return height + 1 / 5; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // one helf the slide width based on height • 3 / 10; ) inline int slideRatio( int height ) ( return height • 3 / 10; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // drawing dimensions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONST UINT TIMER_BATE .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \ensuremath{\mathcal{H}} in the current implementation we do NOT use the default system colors for \ensuremath{\mathcal{H}} controls but rather use the standard 30 gray colors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #define WM_SETSCROLLPOS WM_USER+0
#define WM_GETSCROLLPOS WM_USER+1
#define WM_SETSCROLLRANGE WM_USER+2
#define WM_GETSCROLLRANGE WM_USER+3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // limer constants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               extern NINSTANCE hinstance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // global variables
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #define HANDLE LAM_GETSCROLLRANGE(hand, wParms, IParms, fn) (LRESULT)(long)(fn)((hand))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #define HANDLE LAM GETSCROLLPOS(hund, uPeram, (Param, fn) \ (LRESH.T)(DUDRD)(int)(fn)((hund))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #define HANDLE UM SETSCROLLRANGE(hund, uParam, (Param), fn) \
((fn)((hund), (int)LOUGRO((Param), (int)HIUGRO((Param), (#00L)(uParam)), DL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #define HANDLE LM SEISCROLLPOS(hard, LParam, IParam, fn) \
((fn)((hard), (int)(LParam), (BOOL)(DADRD((Param)), QL)
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIGHTYELLON
LIGHTYELLON
LIGHTRAGENTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3115
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIGHTGRAY
  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 1 of 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // LIGHTGRAY;
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```

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// when moving mouse, this is the extra space to the left
// which we allow the mouse to be without pretending that
// outside the slide control
const int overhang = 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // gap between slider and bottom
const int sliderUpAmt = 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // gap between scale and bottom
const int scaleUpAnt = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void OgnStideControl::GetRessurements( NAMD hVmd,
    int & totalUnits, int & halfWidth,
    int & fullHeight, int & rangeWidth )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Computations and Updates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void DgnStideControl::SetScrollMax( MADD hand, int nValue )
    ( SetWindowSord( hand, m_mydffeet + 3*sizeof(int), nValue ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               intine int OgnStideControl::GetScrollPos( MAMD hUmd )
    ( return GetWindowWord( MAMD, m_myOffset + f*sizedf(int) ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               intine void DgnSlideControl::SetTicCount( MAMD hard, int nvalue )
( SetWindowsord( hard, a_myOffset + 4*sizeof(int), nvalue ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      int logstideControl::GetTicCount( MARD NAnd )
    ( return GetWindowAord( NAnd, m_myOffset + 4*sizeof(int) ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           intine int OgnStideControl::GetScrollMax( MAMD hUmd )
    ( return GetWindowNord( hAmd, m_myOffset + 3*sizeof(int) ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inline void DgmSlideControl::SetFlashState( MARD hAmd, int nValue ) ( SetWindowNord( hAmd, m_myOffeet + O*aizeof(int), nValue ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intine int OgnStideControl::GetFlashState( MAMD himd )
  ( return GetWindowAord( himd, m_myOffset + 0*sizeof(int) ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         //-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ининининининининининининининининининий
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intine int DgnStideControl::GetScroltWin( HAMD hand )
    ( return GetWindowLord( hAmd, m_myOffset + 2*sizeof(int) ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Intine functions
                                                                                                                                                                                                                                                                                                                                                       RECT rect;
GetWindowRect( NUND, &rect );
                                                                                                                                                                                              fullHeight = rect.boltom - rect.top; if( fullHeight < 10 )
                                                                                                                                                                                                                                                                int width = rect.right · rect.left; if( width < 10 ) width = 10;
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                                                                                                                                                                $LIDECTL.099 7-22-95 11:29a
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the mouse is
  25
                                                                                                                                                                                                                                                                                                                                                                                     void DgnSlideControl::UpdateFlash( NUND hund,
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                            //------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int DgnSlideControl::ComputePixel( MARD hWnd, int nOffset )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int OgnStideControl::ComputeOffset( HAMD hWnd,
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      halfWidth = slideRatio( fultReight );
if( halfWidth < 4 )
halfWidth = 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        totalUnits * GetScrollWax( hand ) * GetScrollWin( hand ) * 1;
if( totalUnits < 2 )
totalUnits = 2;</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int totalUnits;
int halflidh;
int rangeWidth;
int rangeWidth;
GetMessurcments( hWnd, totalUnits, halfWidth, fullMeight, rangeWidth );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int totalunits;
int halfuldh;
int rangewidth;
fotheasurements( hand, totalunits, halfuldth, fullHelght, rangewidth );
                                                                                                                                                                                       MC NOC = GetOC( hAnd );

brawflash( hAnd, hOC, curflash, FALSE );

brawflash( hAnd, hOC, nOffset, TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rangeVidth = width - 2 * halfVidth;
if( rangeVidth < 2 ) (
intermediath = ( width - 2 ) / 2;
rangeVidth = width - 2 * halfVidth;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( nOffset >= totalUnits );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int nOffset = (long)xPixel * (long)(totalUnits - !) / (long)rangeWidth;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int nPixel = (long)nOffset * (long)rangeWidth /
(long)(totalUnits - 1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                it( notfact < 0 )
                                                                                                                                                                                                                                                                                            if( curflash == nOffset )
return;
                                                                                                                                                                                                                                                                                                                                                            int curflash = GetflashState( hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return Mixel + halfWidth;
       30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return molfset;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    full Height = 10;
       35
                                                                                                                                                                     2 of 7
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                                                                                                                                                                                                                                                                                                                                                                                                            int notifiet )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int whitel )
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```

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// The tic ratio is computed based on the size of the window and the range.
// We want to have a integral number of positions per tic mark, the most tic
// marks possible assuming a minimum distance between tics.
//
                                                                                                                                                                                                                                                                                    тананананананананананананананананана
                                                                                                                                                                                                                                    // Hessage handlers
//
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void OgnStideControl::UpdateTicCount( HWND hVnd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 vaid DgnSlideControl::UpdatePosition( MIMD hWhd, int nPos )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int totalUnits;
int halfWidth;
int rangeWidth;
GetMeasurements( hUnd, totalUnits, halfWidth, fullMeight, rangeWidth );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( ticCount v= totalUnits-1 ) {
    SetficCount( hWnd, totalUnits-1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // if we need fewer tics, we are done
                                                                                                                                                                                                                                                                                                                                                         SetficCount( hund, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // otherwise, we have only one tic mark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // otherwise, start decreasing the number of tic marks until we find a // value which is an even divisor of the total units
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int ticCount + rangeWidth / minTicDist( fullHeight );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // estimate the maximum number of tic marks we can fit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PosiMessage( GetParent( hand ), WA COMMAND,
GetDigCtrliD( hand ), WAKELONG( hand, BM_CLICKED ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetflashState( hand, -1 );
OnSetScrotlPos( hand, nPos, TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( nPos == GetScrollPos( hund ) )
  return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SelflashState( hwnd, nOffset );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ReleaseDC( hund, NDC );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int OgnSlideControl::OnCreate( NUMD hUmd, CREATESTRUCT * /*IpCreateStruct*/ )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LRESULT DanStideControl::wndProc( MARD hund, UINT message, LPARAN uParam, LPARAN iParam )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #define handleMessage( message, in ) \
    case (message) : \
    retVel = HANDLE_## message ( hAnd, wPeram, (Param, in ); \
    break;
                                                                                                                                                                                                                                                                                                                                           SetFlashState( hind, -1 );
SetScrollPos( hind, 0 );
SetScrollNin( hind, 0 );
SetScrollNax( hind, 9 );
                                                                                                                                                                                                                                                                                                    UpdatelicCount( hand );
                                                                                                                                                                                                                                                         // cell the standard control initialization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( blesp )
return retVel;
                                                                                                                                                                                               bMeeeageHandled = FALSE;
bturn 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    // initialize our state variables
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BOOL bitmp = m_bMessageMandled;
m_bMessageMandled = oldMessageMandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           800L oldMessageHandled = m_bMessageHandled;
m_bMessageHandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LRESUL! retVal = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               default:
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return CallWindowProc( m_myDefProc, hWnd, message, wParam, iParam );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      m_bMessageMandled = fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               handlettessage(
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SETSCROLLPOS,
SETSCROLLRANGE,
GETSCROLLPOS,
GETSCROLLRANGE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KILLFOCUS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCDESTROY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ERASEBICO
                                                                                                                      Page 3 of
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OnSetScrottPos );
OnSetScrottRange );
OnGetScrottRange );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OnCreate );
OnMitDestroy );
OnSerfocus );
OnKillfocus );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OrPaint );
OrEraseBkGnd );
Onliner );
Onsize );
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## EP 0 762 385 A2

```
void DgnSlideControl::OnSetScrollPos( MAND (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void DgnSlideControl::OnSizet Numb humd, UlwI /*state*/, int /*cx*/, int /*cy*/ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void DanSlideControl::OrKillfocus( NUMD hWhd, MUMD hWhdhewfocus )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void DgnSlideControl::OnHCDestroy( HBND /*hknd*/ )
                                                                                                                                                                                                                                                                                                                                                                                                        void DgnSlideControl::Onliner( MUMD NAMA, UINT /*id*/ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void DgnStideControl::OnSetFocus( MAND hWnd, MAND hWndDidFocus )
                                                                                                                                                                                                      if( nValue < curflin )
nValue = curflin;
if( nValue > curflex )
nValue = curflex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Updateflash( hand, -1 );
Killlimer( hand, TIMER_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              m_bMessageMandled * FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( hund in Getfocust ) || hund on GetCapture( ) )
  return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Settimer( hand, TIMER_ID, TIMER_RATE, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( hund == hundDidFocus )
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            UpdatelicCount( hind );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            off GetflashState( hund ) < 0 )

UpdateFlash( hund ) < 60 )

GetScrollWin( hund ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if ( hund == hundleufocus )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // free the GDI objects the last time a control is destroyed
                                                                                                                                                  SetScrottPost hund, nValue );
if fRedraw && nValue 1: curPos ) (
                                                                                                                                                                                                                                                                                            int curPos = GetScrollPos(
int curMin = GetScrollWin(
int curMax = GetScrollWex(
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Updateflash( hund, -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return;
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                                                                                                                        $LIDECTL.099 7-22-95 11:29.
                                                                                                                                                                                                                                                                                            III
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                                                                                                                                                                                                                                                                                                                                                                    Nund, int nvalue, BOOL (Redraw )
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                                                                                                                                                            void DanStideControl::OntButtonDown( NAMO himd, 800x (DoubleClick, int /*/*/, UINI /*keyflegs*/ )
                                                                                                                                                                                                                        // A single button down always sets the focus. Over the slide we also set
// the capture for moving the slide. A double click sets the capture
// whether or not we are over the slide.
                                                                                                                                                                                                                                                                                                                                                                                      UINT DynSlideCantrol::OnGetDlgCode( HUMD /*hWnd*/, MSG fAA* /*lpmmg*/ )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void OgnSlideControl::OnSetScrollRange( NARD hiAnd, int nWin, int nWax,
                                                                                                                                                                                                                                                                                                                long DgnSlideControl::OnGetScrollRange( MAND hUnd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int DgmSlideControl::OnGetScrollPos( NUND hund )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return DLGC_WANTARROWS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return MAXELONG( GetScrollNin( hund ),
GetScrollNex( hund ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SetScrollMin( hind, nMin );
SetScrollMax( hind, nMax );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return GetScrollPos( hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UpdatelicCount( hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( oMax < oMin + 1 )
oMax = oMin + 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      int curPos = GetScrollPos(
int curMin = GetScrollMin(
int curMax = GetScrollMax(
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InvalidateRect( hand, 0, TRUE );
UpdateWindow( hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111
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void DgnSlideControl::OntButtorUp( MAND hUnd, int x, int y, UINT /*keyflags*/ )
                                                                                                                                                                                                                                                                                                        void OgnSlideControl::OrdouseNove( NUND hund, int x, int y, UINT /*keyflags*/ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RECT rect;
GatWindowNect( hWnd, &rect );
int width * rect.right - rect.left;
int height * rect.bottom - rect.top;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( hund i= GetCapture( ) )
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int totalUnits;
int halfbldth;
int rangeWidth;
GetMeasuramonts( hWnd, totalUnita, halfWidth, fullMeight, rangeWidth );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // we rest to see if the button is over the slide; we do not test to see // if the buttons position matches the slides position since that may // fail on small sliders (where separate positions are very close).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int xCenter = ComputePixel( hund ) - GetScrollwin( hund ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( x < 0-overhamp | | x >= width+overhamp | | y < 0 | | y >= height ) 
updateflash( hkmd, GetScrollPoot hkmd ) - GetScrollWin( hkmd ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ReleaseCapture( );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Serfacus( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( hand as GetCapture( ) ) {
    UpdateFlash( hand, ComputeOffset( hand, a )
    return;
       5
                                                                                                                                                                            RECT rect;
GetWindowRect( hWnd, &rect );
                                                                                                                                                                                                                                            if( hand != GetCapture( ) )
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( oldPos == newPos )
Updateflash( hWnd, -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int newPos = GetStrollPos( hWnd );
int newPos = ComputeOffset( hWnd, x ) + GetStrollMin( hWnd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UpdatePosition( hard, newPos );
  10
                                                                                                                                                    SLIDECTL.099 7-22-95 11:294
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void OgnSlideControl::OnKeyDown( MAND hind, UINT vk, 800t /*fDown*/,
    int /*CRepeat*/, UINT /*flags*/ )
                                                                                                                                                                                                                                                                                                                                                          void DgmStideControl::Drawflash( MAMD NAMD, NDC NDC, int mOffeet, BOOL /*bState*/ )
                                                                                                                                                                                                                                                                                                                                                                                                                             //------
                                                                                                                                                                         Int totalUnits;
The helfwidth;
Int fullHeight;
Int rangeWidth;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int curPos = GetScrollPos( h\u00e4nd );
int curMin = GetScrollWin( h\u00e4nd );
int pageSize = ( curMax - curMin ) / GetTicCount( h\u00e4nd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lf( x < 0-overhang || x >= width-overhang || y < 0 || y >= height )
updateflash( hand, GetScrollPos( hand ) - GetScrollWin( hand ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int width * rect.right - rect.left;
int height = rect.buttom - rect.top;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ) // switch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                case VK_PRIOR: // page up
if( curpos > curmin )
updatePosition( hand, curPos ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      case VX_LEFT:
case VX_UP:
if( curPos > curMin )
UpdatePosition( hWnd, curPos · 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             switch( vt ) (
                                                                                                                                                                                                                                                                                                               if notfeet < 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    case VK_NEXI: // page down
if( CurPos < curMax )
UpdatePosition( hkrd, curPos + pageSize
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      case VK_END:
    UpdatePosition( hWnd, curMax );
    return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              case VC_BIGHT:

case VC_DOAM:
if curps < curMax )

it curps < torMax )

updatePosition( hund, curPos + 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             case VK HOME:
    UpdatePosition( hMmd, curNin );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Updateflash( hund, ComputeOffset( hund, x ) );
                                                                                                                                                                                                                                                                                          return;
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    40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pagesize );
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```

```
void DgnSlideControl::DrPaint( MJMD hMrd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Movelot NDC, xCenter + halfWidth, 2 ):
LineTot NDC, xCenter + halfWidth, full
LineTot NDC, xCenter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int totalUnits;
int halfblidh;
int rangeWidth;
fut rangeWidth;
GetMeasurceents( hWnd, totalUnits, halfWidth, fullMeight, rangeWidth );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // create GDI objects
WPEN hBorderPen * CreatePent PS 50LID, 1,
WPEN hNightlightPen * CreatePent PS 50LID, 1,
WPEN hShadowPen * CreatePent PS_50LID, 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Movelof MDC, helfwidth - 1, fullHeight - scaleUpAnt LineTo( MDC, helfwidth + rangewidth - 1, fullHeight - scaleUpAnt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int #Center *
ComputePixel( hMrd, GetScrollPos( hMrd ) - GetScrollMin( hMrd ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SelectObject( NDC, hBorderPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // draw the bottom scale with tic marks
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // draw the shedow for the slider
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // get the drawing dimensions
                                                                                                                                                                                                                                                                                                                             NPEN oldPen = (NPEN) SelectObject( NDC, hShedowPen
                                                                                                                                                       Movelo( hDC, 0,
                                                                                                                                                                                        SelectObject( NDC, hBorderPen );
                                                                                                                                                                                                                          int width = 2 * halfWidth * rangeWidth;
int top = grooveTop(fullHeight);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int #Center = ComputePixel( hWnd, nDffset );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GetMeasurements( hand, totalUnits, halfWidth, fullMeight, rangeWidth );
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                                                                                                                               SLIDECIL.079 7-22-95 11:29.
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::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fullHeight - sliderupAmt - helfwidth );
fullHeight - sliderupAmt );
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             borderColor );
1 highlightColor );
shadowColor );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Linefot NOC,
                                                                                                                                                                                                                                                                                                                             Novelo( hDC,
Linelo( hDC,
                                                                                                                                                                                                                                                                                                                                                                                                                  Linelog Noc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Linelo(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Movelo( hDC, xCenter - helfWidth + 1, fullHeight - sliderUpAmt - halfWidth )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Linelo( NDC, xCenter - 1,
Linelo( NDC, xCenter - 1,
Linelo( NDC, xCenter - halfWidth,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Movelo( hDC, xCenter - halfWidth + 2, full weight - slideruplat - halfWidth +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Linelo( hDC, xCenter · helfWidth · 1, 1 );
Linelo( hDC, xCenter · helfWidth · 1, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Movelo( hDC, 2,
LineTo( hDC, width · 2,
LineTo( hDC, width · 2,
                                                                                                                                                                                                                                                                                            Limeto( NDC, xCenter,
                                                                                                                                                                                                                                                                                                                                                                                 SelectObject( NOC, hShadowPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hovelo( hDC, xCenter + halfWidth, top + 2 );
Linelo( hDC, xCenter + halfWidth, top + 3 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SelectObject( hDC, hShadowPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Havelo( NDC, 1, top + 2 );
Linelo( NDC, 1 top + 1 );
Linelo( NDC, width - 1, top + 1 );
                                                                                                                                                                    // draw the pointer part of the slider
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SelectObject( NOC, hMighlightPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SelectObject( NDC, hBorderPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // draw the slider
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // put back the slider shadow over the white groove point
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SelectObject( NDC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SetectObject( hDC, hWighlightPen );
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCC LIGHT
                                                                                                                                                                                                                                      ACenter + helfWidth - 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center - helfwidth + 1, 0 );
Center + helfwidth - 2, 0 );
Center + helfwidth - 1, 1 );
ACenter + helfwidth - 1, fullHeight - sliderupAmt -
                                                                                                                                                                                                                                                                                                                           xCenter + halfwidth - 2,
                                                                                                                                                                                                                                                                                                                                                                                                                xCenter - helfWidth + 2, 2 );
xCenter + halfWidth - 2, 2 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  xCenter - halfuldth,
 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hShadowen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <del>8</del>888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40
                                                                                                                                                                                                                                      3 );
full weight - stiderUpdat - halfWidth )
                                                                                                                                                                                                                                                                                                                             2 );
full Height - silderUplat - heiflidth )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fullHeight - sliderUpAmt
fullHeight - sliderUpAmt
fullHeight - sliderUpAmt
                                                                                                                                                                                                                                                                                            full Height · stider Upolont · 2 );
                                                                                                                                                                                                     full Height - stiderUplat - 3 );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel Tridit )
```

```
extern "C"
LRESULT _export FAR PASCAL DgnSlideControllandProc( MAND hund,
UINT message, LPARAN wParma,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // we define an explicit LMM ERASEBEGND handler to avoid providing an // hBrush in the MNDCLASS definition. BoundsChecker claims it does not // get deleted. Whether true or not, it is comforting to not see it // ln the debug log.
// In the debug log.
/BOOL DgnSlideControl::DrEraseBEGnd( MAND hAnd, NDC hDC )
                                                                                                                                                                                                                                                                                                                                                                                                                                              //·····
                                                                                                                                                                                         void DgmSlideControl::libMainInit( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Movelo( NDC,
                                                                                                                                                                                                                                                                                                                                        . (PARAM (Peram )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DeletePen( hBorderPen );
DeletePen( hHighlightPen );
DeletePen( hShadowPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RECT rect;
rect.left
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GetClientRect(hand, &rect);
WBRUSH hor * CreateSolidBrush( backgroundColor );
FillRect( hoc, &rect, hbr );
DeleteBrush( hbr );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Selectifibject( NDC, oldPen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drawflesh( hand, NDC, GetFlashState( hand ), IRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MBRUSM hbr = CreateSolidBrush( backgroundColor );
fillRect( hDC, &rect, hbr );
DeleteBrush( hbr );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rect.left = xCenter - halfWidth + 3;
rect.right = xCenter + halfWidth - 3;
rect.top = top;
rect.bottom = top + 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // erase groove in center of slider
                                                                                                                                                                                                                                                                                              return slideControl.wndProc( hWnd, message, wParam, (Param );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RECT rect;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EndPaint( hand, ApaintStruct );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // clean up and exit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // draw the focus rectangle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  line of hDC, xCenter . 1, full Height . sliderUpAmt . 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SelectObject( NOC, hBarderPen );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            xCenter . 1, fullHeight . sliderUpAmt . markHeight( fullHeight
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                                                                                                                                        SLIDECIL.COP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          m_my0efProc = DefWindowProc;
m_my0ffset = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // We are not based on any existing class.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MMDCLASS undClass;
memset( furuClass, '\0', sizeof(undClass) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // try to register the class; if it fails the first time, delete
// the existing class and try again
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( 1::RegisterClass( &wndClass ) ) (
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WADCLASS existingwholclass;
GetClassInfot 0, DGM_SLIDECONTROL, &existingwholclass.);
UnregisterClass( DGM_SLIDECONTROL, existingwholclass.hinatance );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       :RegisterClass( &undClass );
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.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .// Compute the memory consumption by waiting the global heap.
// Count every non-discardable block which belongs to our EXE or Olla.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       const cher *moduletist() =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #include <toolhelp.h>
#include <string.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         long computationary (Jset)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "DRAGDEV",
"DRAGACPA",
"DRAGACON",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Copyright (c) 1991-1995 by Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // loop through the global heap
GLOBALEWIRY GENTY;
gEntry.dw5110 = s1200f( GLOBALEWIRY );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // load global information
GLOBALIMFO glnfo;
glnfo.dwSize = sizeof( GLOBALIMFO );
                                                                                                                                                                                                                                                                                                                                                for( BOOL bHeathtry = Globelfirst( &gEntry, GLOBAL_ALL );
bHeathtry;
bHeathtry = GlobelWext( &gEntry, GLOBAL_ALL ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                            MCDULEENIRY MEntry;
MEntry.chesize . sizeof( MCDULEENIRY );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Globalinfo( Aginfo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    long total Memory = 0;
                                                                                                                                                                                                                                                                                                                                                                                                               TASKENTRY testEntry; testEntry ...
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Also memory computation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                     // ignore the following types of data blocks switch( gEntry.wlype )
                                                                                                                                                                                                                                                                                                    // Ignore free blocks if ( IgEntry.hOwner )
                                                                                                                                                           TENTERNAL:
TSENTINEL:
T_BUNGERMASTER:
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                                                                                                      STATDLG.CPP 7-22-95 11:310
                                                                                                                                                                                                                                                                                                        continue;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return total Memory;
     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // get the module name; if this fails, try to get the task name
if( ModuleFindWandte( faithtry, (MMODULE )gEntry.hOuner ) )
continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       default:
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for( char** module = moduleList; *module; **module )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( stricmp( *module, mEntry.szModule) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                totalMemory *= gEntry.duBlockSize;
break;
      35
                                                                                                     740 1 07 1
        40
          45
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```

```
Adeline WAKEUP STATE
Adeline ZIP STATE
Adeline CITY_STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                // This is the instance of the DgnStideControl DgnStideControl elideControl; extern HiBSTANCE himaterice; // when we cal HIBSTANCE himaterice; // himaterice m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     finctude suindows.h»

finctude string.h»

finctude stdi.h»

finctude stdi.h»

finctude stdi.h»

finctude stige.h»

finctude stige.h»

finctude stige.h»

finctude stige.h»

finctude stige.h»
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ং
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Binclude #include ddno!.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #include "wcoach.h"
#include "strhash.h"
#include "stidectl.h"
                                                                                                                                                                                                                    #define handleMessage( message, hMrd, wParam, IParam, In ) \
    case (message) : returnValue = HANDLE_ ## message( (hMrd), {wParam), (IParam
    r> ), (In) ); break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                extern "C" (
#include "fepext.h"
                                                                                                                                          static char femcityOocl) = "ctall.voi";
static char femcityOigitsVoci) = "cdigits.voi";
                                                                                                                                                                                                                                                                                                                                                                         Finctude "heshcez.h"
Finctude "deamon.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // MessageBox( Diguin::h\u00e4nd, "in orDestroy", "not dead yet?", M8_OX | M8_ICOMEXC
*> LAWATION );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright (c) 1991-1995 by Oragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Main module: Windows loop and algoritm flow in onSpeech()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             wcake.cpp
Example of modification to WAPP.CPP. It is a training application based on the code in WAPP.CPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTIONS
  10
                                                                                                                     MCDACH. CPP 7-22-95 11:53a
                                                                                                                                                                                                                                                                                                                                                                                                                                // when we call DgnSlideControl::libMainInit()
// hinatance must be initialized...
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                                                                                                                                                                                                                                                                                                                   void ChoiceLietStats::printStats()
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void ChoiceListStats::recordNesult( const chare src )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              static chare sayPrompt() = (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static char userPathString( 256 ) = ".";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static char cityUser[ 128 ];
static char digitsUser[ 128 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              class ChoiceListStats
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Say: WakeUp",
"Say: ZipState",
"Say: City",
                                                                                                                                                                                                                                                                                       FILE *out * fopen( *digstats*, "a+" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void printStats();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void setOpenRecResult( const char* arc ) ( strcpy( openRecResult, arc ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               char openRecResult[ 128 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int digitStats[ 500 ];
                                                                                                                                                                      1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               char "o = openRecResult;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void recordResult( const char* src );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( int ( = 0; 1 < 5; **i )
    30
                                                                                                                                                                                                                                                                                                                                                                                              else
return;
                                                                                                                                                                                                                int "v = digitStats;
                                                                                                                                    fort int 1.0; is5; ... )
                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( ***o && ***src ** ' ')
**src;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        digitStats[ i*100 + 10*( *arc - 10* ) + ( *o - 10* ) ] += 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( lisdigit( *o ) || lisdigit( *src ) )
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ityOigitsYoc = 0;
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      = "ctall.vom";
= "ctall.vom";
                                                                                                             700 1 of 19
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        45
        50
```

```
class Diguin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static ChoicelistStats choicelistStats;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          public:
    static long FAR PASCAL _export undProc( NAMO, UINT, UPARAM, LPARAM );
    static NAMO hund;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protected:
                                                                                                                                                                                                                 static int appState;
atatic SD wCMD cancelbord;
static SD wCMD beds behlvord;
static SD wCMD poloSleepword;
static SD_WCMD wakedpword;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static bool messageMandled;
static bool sauError;
static bool ignoreErrors;
static char* name;
                                                                                                                                                                      static char buf[ UTT_PROMPT_LENGIM ];
static Comm* comm(4);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 static Speechlask *speechlask;
static UltCharmel *charmel;
atatic Recognizer* recog;
static UttCharmel ziputt, cityutt;
                                                                                                                         static void reporttrron( int code, char far "message );
static void SD_CALLBACK_export postSpeechEvent( SD_CMANNEL, SD_CMANNEL_EVEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tatic AC SD WORD > citylida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tatic short wordPause;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fclose( out );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              memset( openRecResult, 0, sizeof( openRecResult ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for( int j=0; j<10; ••j )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fprintf( out, "// %d\n", i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :
;
                                                                                                                                                                                                                                                                                                                                                                                          pitspelling ull promi LENG
                                                                                                                                                                                                                                                                                                                                                           greeslithState;
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                                                                                                       MODER COP 7-22-95 11:53a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // speech driver task ID
                                                                                                                                                                                       // scratch but
                                                                                                                                                                                                                                                                               // zips, city, state, error
20
 25
                                                                                                                                                                                                                               VC char >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ut tChannel
Ut tChannel
                                                                                                                                                                  1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // DigWin Globels...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Speech lask*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   friend int PASCAL WirMeint HINSTANCE, MINSTANCE, LPSTO, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // sub service routines for the main winProc services
static void setDigitsUser( char* usrName );
static bool isConZiphrase();
static bool isCanzelBadLabelGoToSleep( MARD );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tatic void
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Olgdin::cityMypo;
Olgdin::cityIds;
Olgdin::zipe;
Olgdin::zipValue;
Olgdin::zipValue;
Olgdin::zipPhrase!
                                                                                                                                                                                                                                DigMin::cancellord = 0;
DigMin::bed.abelword = 0;
DigMin::goToSleepWord = 0;
DigMin::wakeUpWord = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oninitDialog( MAND hund, MAND ropEntri, long );
                                                                                                                                                                       Olguin::buf( UTI_PROMPT_LENGTH );
Olguin::comm[4];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Digitin::ziputt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OlgWin::hWnd;
DlgWin::messageMandled;
DlgWin::speechTask;
                                                                                                                                                                                                                                                                                                              DigWin::appState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         od( WAND, Uttcharmet* );
lin::rerecoglip( long* foundlip, int* foundlistance );
                                                                                                                                                                                                                                                                                                                                                                       in::1pAgreesVithState;
in::Hest istening;
in::fixError = 1;
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *dragon123\0
                                                                                                      7age 2 of 19
      40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int a, int y );
                                                                                                                                                                                     // scratch but
                                                                                                                                                                                                                                                                                                                // rips, city, state, er
      45
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חניסחסטים, יכם - מיסחסבים

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ttatic CitySt alberta(20, "alberta");
static CitySt britishColumbia(2), "britishcolumbia");
static CitySt lab-ador(22, "lab-ador");
static CitySt manitoba(23, "manitoba");
static CitySt medicumbicit(23, "manitoba");
static CitySt modernaulcit(25, "manitomiland");
static CitySt morthbesiterritories(26, "morthwesiterritoriestic CitySt moreocala(27, "movescotia");
static CitySt moreocala(27, "movescotia");
static CitySt princeColumbiatand(29, "princecolumdiatand")
static CitySt quebec(3), "quabec");
static CitySt quebec(3), "quabec");
static CitySt quebec(3), "quabec");
static CitySt quebec(3), "quabec");
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static chare estSpecialZip( CitySLe el, chere value )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static CitySt mexico( 40, "mexico" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static CitySt bedtabel( ), "badlabel" );
static CitySt firstDayAir( 2, "firstDayAir" );
static CitySt restDayAir( 3, "nestDayAir" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static ConfigCommands cfgCommands() = (
    ( "set" setCommand ),
    ( 0, 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /// set m variable... the particular data and functions known to setCommand()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static char* setCommand( char* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     struct ConfigCommends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         straip . test;
                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( i == 0 )
return "Bad special Zip code assingment";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tong test = atol( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( cher "savatue; "s; ++s )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           const char* name;
char* (*command)( char* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 yst medicuravick( 26, "membrunivick" );
yst medicurdiand( 25, "mentpundiand" );
yst morthbeatterritories( 26, "morthwestterritories" );
yst movescotia( 27, "movescotia" );
yst movescotia( 28, "onterio" );
yst princeduardialand( 29, "princeduardialand" );
yst princeduardialand( 29, "princeduardialand" );
yst quebec( 3), "quaboc( );
yst quebec( 3), "quaboc( );
yst quebec( 3), "quaboc( );
yst quaboc( 3), "quaboc( 3), "quab
                                       10
                                                                                                                                                                                                                                                                                                                                                   MCDACH.CPP 7-22-95 11:XJa
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** Antario, value ); )

** Antario, value ); )

** Aprince describing describence describing 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     static char* setHedGranswichZip( char* value )
s AnedGranswich, value );
static char* setHeufoundlandZip( char* value )
s AnewFoundland, value );
static char* setHorthWestFerritoriesZip( char* )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static char* setDefaultCommPars( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static CommPars* compors[ 4 ];
static char* commformat[ 4 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -- amorthWestlerritories, value ); )
static char* setMovaScotiažip( char* value )
s &movaScotia, value ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 static char* settabradorZip( char* value )
=> &labrador, value );
static char* setHanitobaZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static chare setAlbertaZipt chare value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static char* setBedLebelZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static char" setNextDayAirlip( char" value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ** martiring );
if marields < 5 )
return "Grong number/order of arguments... ex:\n\test comm = com1 9600 n
** 8 1";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ** &yukonTerritory, value ); )
tatic char* setMexicoZip( char* value )
** &mexico, value ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ** &britishColumbia, value ); }
.tatic char* setLabradorZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a &alberta, value ); )
tatic char* setBritishColumbiaZip( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ** Liver (DayAi
              30
                                                                                                                                                                                                                                                                                                                                                        1ft bend 1= 19200 64 bend 1= 14400 65 bend 1= 9600 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                           {/( Opport || port>6 )
  return abad commont number, (must be 1 thru 4)*;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int port-comport( 3 ) · '0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // check to see if the arguments are reasonable and set the port...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int numfields = secanf( value, "Xe Xd Xe Xd Xe", EdetaBite, SatopBite, for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char parityStrf 10 ], comPort[ 20 ], formeiString[ 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for( cher "s = value; "s; ++g )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int beud, databits, stopbits;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       are setNorthWestTerritoriesZip( chare value ) ( return aetspecialZip(
              35
                                                                                                                                                                                                                                                                                                                      1 2 S 3 19
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ( return setSpecialZipc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ( return setSpecialZipc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ( return settpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ( return setSpecialZip;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ( return setSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ( return setEpscialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ( return eetSpecialZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ( return setSpecialZipt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ( return setSpecialZipx
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( return setSpeciatZip(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( return settpecial2ip(
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ateric chare serpureState( chare value )
                                                                                                                                                                                            static char* setUserPath( char* value )
(
                                                                                                                                                                                                                                                                                                                                                                                State2ip* az * State2ip::findState2ip( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      comPars( port-1 ) = new CommPars( port, baud, parity, dataBits, stopBits );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( stopBits == 1 )
stopBits = ONESTOPBIT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            switch( tolower( *parityStr ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( char "s = value; "s && lisspece( "s ); *** );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ((( maffelds == 5 )
commformat( port() ) = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 else if( stopBits == 2 )
stopBits = INOSIOPBITS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( dataBits i» 7 && dataBits i= 0 ) return "strange number of commport dataBits";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int parity;
                                                                                                                                                                                                                                                             return D;
                                                                                                                                                                                                                                                                                                                                if( st == 0 )
return "bad Pure State in UPS.CFG";
                                                                                                                                                                                                                                                                                           sa->pure( IRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                .....
                                                                                                                                                                        for( char *s = value; *s && lisspace( *s ); **s );
                                                                                                                                           ; ·0': 3 %
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return "unknown comport Parity";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              boud := 4800 && boud := 2400 && boud := 1200 )
return "unknown commont Boud rate";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return "strange number of commerce stopBits";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         stropy( commiscreet! port-1 ), formatString );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         commutarmet( port-1 ) = new cher( strien( formetString ) + 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          parity = NOPARITY;
parity = COOPARITY;
parity = EVENPARITY;
parity = NARKPARITY;
parity = SPACEPARITY;
10
                                                                                                                      UCDACH.CPP 7-22-95 11:33a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              break
break
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          static char" setfepPar( WORD id, char" value )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static chare setZipRanget chare value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static char* setEndDISpeech( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        static char* setStartOfSpeech( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static ZipRangeOC zroc;
                                                                                                                                                                  '9 return Murong number arguments... ex:\n\tset Zipfange = 92262 92262 beit => 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( setfepPar( 13, value ) )
return "StartOfSpeech Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return "Par Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for( char "s = value; "s && lisspace( "s ); **s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              strcpy( userPathString, value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( *value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( setFepPart 12, value ) )
return "EndOfSpeech Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return 0;
                                                                                                                                                                                                                                                                                                                                                                                       char pretamet 20 ), postNamet 20 );
                                                                                                                                                                                                                                                                                                                                                                                                                           long lowZip, highZip;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               for( cher *s = value; *s; **s )
({{ *s = *; *} } *s = * *;
                                                                                                                                                                                                                                      else if( numfields s= 4 )
zroc.addRange( lowZip, highZip, preName, postName );
                                                                                                                                                                                                                                                                                 if( numfields == 3 )
zroc.addRange( louZip, highZip, preName, 0 );
                                                                                                                                                                                                                                                                                                                                          30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fep_Setpar( SUPER_USER, id, v );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 v = (NORD )atol( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WORD Y;
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                                                                                                                            Page 4 of 19
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static char* setCommand( char* var )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static ConfigCommands setCommands() =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static char* setNothing( char*,)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (0,0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ( "BadLabel"
( "FirstDayAir",
( "MextDayAir",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ( "StartOfSpeech",
( "EndOfSpeech",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                       while( impace( "var ) )
                                                                                                                                                                                                                                                                           bool foundEqual = ("value ** '*');
                                                                                                                                                                                                                                                                                                          iff "value on "\0" ) et command... ex: set variable o value";
                                                                                                                                                                                                                                                                                                                                                         while( instrumt "value ) || "value == '_' )
--value;
                                                                                                                                                                                                                                                                                                                                                                                                      cher value = var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ( "Mexico",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ( "Alberta",
( "BritishColumbia",
( "Labrador",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ( "7 ipRange",
     5
                                                                                                                                                                                                           it( ItoundEqual )
                                                                                                                                                                                                                                               "Sasketchewan",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Manitoba"
"ReuBrunswick"
"ReuFoundland"
"NorthWestlerritories",
"NovaScotia",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "PrinceEdwardIsland".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Comport",
                                                                                                                                                                   while( isspace( "value ) )
**value;
                                                                                                                                  if "velue la 'a' )
 10
                                                                                                                MODACH. CPP 7-22-95 11:338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         setAlbertaZip ),
setBritishColumbiaZip ),
setLabradorZip ),
setManitobaZip );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     setBodLabelZip ),
setFirstDayAirZip ),
setMextDayAirZip ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                setStartOfSpeech ),
setEndDfSpeech ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  setMexicoZip ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            setTukonlerritoryZip ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             setPrinceEdwardIstandZip ),
setOuebecZip ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         netHeuBrunawickZip ),
netHeuFoundlandZip ),
netHortNeetTerritoriesZip ),
netHorwScotiaZip ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    setZipRange ),
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void parseConfig( const char* filename )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        char *errorMessage = ( cfgfile ** 0
7 "could not open UPS.CFG file"
; 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 white( *value && isspace( *value ) )
**value;
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           char line1 256 1;
int lineNumber = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        filE *cfgfile = fopen( filename, "r" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return "unknown set variable";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for( int i=0; setCommands( i ).name (= 0; ++i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          while( errorMessage ** 0 && fgets( line, sizeof( line ), cfgFile ) f= 0 )
                                                                                                                                                       if( errorMessage )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( stricmp( var, setCommands( i ].name ) == 0 )
  return setCommands( i ].command( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                **value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      while( lisspace( "value ) && "value }s '\0' )
++value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char "value s var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( *var == *#' || *var == '\0' )
continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   **lineNumber;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                char "var = line;
                                                                                                                                                                                                                                                                                                                            for( int i=0; cfgCommands[ i ].name i= 0; **i ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( *value 14 .\0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return "no \"=\" sign in set command... ex: set variable = value":
                                                                                                                                                                                                                                                                                                                                                                            while( isspace( *value ) )
***value;
                                                                                                                                                                                                                                                                                                                                                                                                                         ",0), : .....
                                                                                                                                                                                                                                                                                            if( stricep( var, cfgCommands[ i }.name ) == 0 )
                                                                                                                                                                                                                                 breek;
                                                                                                                                                                                                                                                               errorMessage = cfgCommands[ i ).command( value );
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class FindFilePath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cher findfilePath::defaultfileSpec[] = "".";
cher findfilePath::defaultPath!) = ".\0";
                                                                                                                                                                                                                                                                                                                   findfilePath::findfilePath( char* fapec, char* p, int flag )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MessageBox( DigWin::hWnd, errorMessage, errorType, MB_OX | MB_ICOMEXCLAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cher *pathString, *path;
cher *ffleSpec;
int attribfleg;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bool findfirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static char defaultPath();
static char defaultFileSpec();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( cfgfile )
fclose( cfgfile );
                                                                                                                                                                                                                                                                                                                                                                                                                         char* filename() ( return attrib.ff_name; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         findfilePath( char* fspec, char* p =0, int flag =fA_NORMAL );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           struct fiblk attrib;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool findfilePath::findFirst();
bool findfilePath::findBext();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CindfilePath()
                                                                                                                                                                                                                                                                                    attribfing - flag;
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       itoat lineNumber, errorType + 20, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char errorType( 40 ) = "UPS.CFG error, line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( pathString |= defaultPath )
delete pathString;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( fileSpec 1* defaultfileSpec )
delete fileSpec;
                                                                                                                                                                           poth = pathString = new char( atrlen( p ) + 2 1;
strcpy( pathString, p );
for( p = pathString; *p; ++p )
10
                                                                                                                       MCOACH.CPP 7-22-95 11:334
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ج</u>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bool findfilePath::findfirstPrimitive()
                                                                                                                                                                                                                     bool DigWin::oninitDialog( MAMD hDig, MAMD, tong )
                                                                                                                                                                                                                                                                                                                                                                                    bool findfilePath::findMext()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bool findfilePath::findFirst()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            else
pathString = path = defaultPath;
                                                                                                                                                                                                                                                                                                                                        if( !findhext( &attrib ) )
return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                return findFirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   path - pathstring;
30
                                                                                                                                                               speechlask = new Speechlask( name, reportError );
                                                                                                                                                                                                                                                                                                         return findFirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( fspec )
                                                                                                                                                                                                    1010 - MIQ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fileSpec = new char[ strlen( (spec ) + 1 );
strcpy( fileSpec, (spec );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :.0/. * de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          p * stpcpy( p, fileSpec );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cher* p = stpcpy( fSpec, peth );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   char* fSpec a new char[ strien( path ) + strien( fileSpec ) + 2 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( *path ** '\0' )
return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             path ** * strlen( path ) * 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( p-fspec 44 *(p-1) |= ';' 44 *(p-1) |= '\\' 44 *(p-1) |= '/' )
*pr+ = '/';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fspec = defaultFileSpec;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          delete fSpec;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( Ifindfirst( fSpec, &attrib, attribflag ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            detete (Spec;
return IRUE;
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                                                                                                                                                                                                                                                                                                                                                                                                                              ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SeruDigiterMessage( hDig, USE_COMBO_ID, CB_ADDSTRING, 0, (DWORD) //P => ath.filename() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WestageBoxt hDlg, "Comm Error", "Port Initiatization Failed", MB COM | MB_ICOMEXCLAMATION );
                                                                                                                                                                                                                                                                                                                                                                             sendDigitamMessaget hDig, wDRD_PAUSE_SLIDE_ID, wM_SEISCROLLRANGE, 0, 0x02000 e> 06kL );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    perseconfig( "ups.cfg" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  findfilePath ffPath( "".un?", userPathString );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for( Int i=0; i<4; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    StateZip::initZipIoUsaStateZipt);
                                                                                                                                                                                                                                                                                                                                          Sendbigitemmessaget hole, wond_pause_stide_id, wm_selscrottpos, 0x0100, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // set up the usr listbom if( ffPath.findFirst() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           appState - ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog = 0;
                                                                                                                                                                                                                                                                                                for( 1=0; 1<100; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                            speechTask->setPar( "computation", (short )12 );
speechTask->setPar( "adapt-tolerance", (short )3 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fep_Setpar( SUPER_USER, 13, 87 );
fep_Setpar( SUPER_USER, 12, 58 );
   5
                                                                                                                                                                                                       file file + topen( zipfilettame, "r" );
                                                                                                                                                                                                                                                                 cher zipfileName[] = "zip/zip.000000000"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          while( IfPath.findlext() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( compare( i ) is 0 )
                                                                                                                                        fclose( file );
                                                                                                                                                                      in lite .. 0 )
                                                                                                                                                                                                                                   iton( i, zipfilellame + 8 + (i<10), 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       comm( i ) * new Comm( hDlg, comPers( i ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              delete comPara( i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( comm( i )-verror() is 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               comm( i ) = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         delete commit i 1;
10
                                                                                                     MODACH.CPP 7-22-95 11:33a
                                                                                                                                                                      continue;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char* buf = outBuf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return TRUF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              while( *format )
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StateZip::initHSs( zipfileName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           switch( format )
                                                                                                                                                                                                                                                                                                                                                                                                                case '\\':
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Case 'X':
                                                                                                                                                                                                                                                                                                                                                                                                                                                             else

*buf** = 'X';

break;
                                                                                                                 ·· format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  else if( tolower( *formet ) == 's' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              **format;
if( tolower( *format ) ** '2' )
                                                                                                                                                                                                                                                                                                                                                                                if( tolower( *format ) ** 'r' )
                                                                                                                                                                                                                                                                                    else if( tolower( *format ) == 'n' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ise if ( tolower( *format ) == *c* )
                                                                                                                                                                                       ise if( tolower( "format ) az 'b' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            const char* c=city;
while( (*buf = *c**) i= 0 ) .
**buf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    corst char* s=state;
white( (*buf = *s++) (* 0 )
+*buf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  const char* ==zip;
white( (*buf = *z++) != 0 )
+-buf;
                                                                                                                                                                                                                                                                                                                   ·· format;
                                                                                                                                                                                                                                                                                                                                                 ·bufor a '\r';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ··formt;
                                                                                                                                                         *buf . . .\n';
                                                                                                                                                                                                                     ·· formet;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ··format;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        · format:
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void DigVin::outComPort()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                 static time_t lastifies = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fort int i=0; ic4; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char outBuff 256 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              //charmel->beep( "ding.wav", 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wastistening = channel-vististening();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  essert( bul - outfluf < 256 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      • <u>1</u> 0;
                                                                                                                                                                                                                                                                                                                                                                                               long currentlime * biostime( 0, 0 );
                                                                                                                                                                                                                                                                                               if( lastinterval > 1000 ) lastinterval = 1000;
                                                                                                                                                                                                                                                                                                                                                         lastInterval = (lastInterval + (currentlime - lastlime)) / 2;
                                                                                                                                                                                itoal rate, outBuf, 10 );
                                                                                                                                                                                                                         lastlime = currentlime;
                                                                                                                                                                                                                                                         ong rate = (36001 * 10001 / $51) / lastinterval;
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if comme ( i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   default: *format**;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commit 1 -> combirite( outBut, strien( outBut ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         else if( tolower( "format ) == 't' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·· formet:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( *format t= '\0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *buf++ = *format++;
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                                                                                                                                      MOMCH.OPP 7-22-95 11:334
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void DlgWin::reportError( int code, char far *message )
{
                                                                                                                                                                                                                     ) // [ventHandler
                                                                                                                                                                                                                                                                                                                                                                                                                  void SD_CALLBACK_export DigWin::postSpeechEvent( SD_CMARKEL ch, SD_CMARKEL_EVEN * 1 eventin )
                                                                                                                                                                                                                                                     if( 0 == PeekMessage( dasg, hard, LM_CHANNELSTART, LM_CHANNELSTART, PM_NOREM ==> DVE | PM_NOTIELD ) )
POITMessage( hard, LM_CHANNELSTART, (NCRD )ch, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SetWindowlext( GetDigitem( hWnd, SIAT3_TEXT_ID ), outBuf );
                                                                                                                                                                                                                                                                                                                                      MSG aug;
                                                                                                                                                                                                                                                                                                                                                                        assert( eventin ** SO_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // throw up an error message
char buffer( 512 );
sprintf( buffer, "An error has occurred\n code = %d\n message = %a",
code, message );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( ignorefrrors )
    return; // prevent recursion
ignorefrrors = YES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            * * outBuf * strten( outBuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Itoa( numerrors, outbut, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SetWindowlext( GetDlgitem( hWnd, SIAIZ_IEXI_ID ), outBuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 strcpy( s, " phgs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s = outBuf + strien( outBuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ttoa( **totalRumberOfPackages, outBuf, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static long total Number Of Packages = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SetWindowText( GetDigitem( hWnd, SIAII_IEXI_ID ), outBul );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            strcpy( s, " pkgs/hour
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              char *s = outBuf + strtent outBuf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         stropy( s, " BadLabels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sauteror = YES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gnoreErrors = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   f( stricmp( message, "Bad token" ) }
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MessageBox( hWnd, buffer, "WinTalk SDAP! Error", Ma_IKSDWDAL | MB_ICONSTOF | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // terminate... kill the htopparentWindow if( hWnd )
PostMessage( hWnd, WM_CLOSE, 0, 0 );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
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int DigWin::isGoodZipPhrase()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void DigVin::onCommCheckMsg( MAAD, Comm<sup>a</sup> cm )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     void DigNin::onCommSendSyncNsg( NUND, Comm* cm )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #define HANDLE UM COMM SEND_SYNC_NSG( hund, wParam, (Param, fn ) \
    ((fn)(hund, (Comm*_)(Param), 11)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         adefine HANDLE UM CHANNELSTART(hund, wParam, IParam, In) \ ((fn)(hund, (SD_CHANNEL )wParam), IL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                skirtine HANDLE IM COMM CHECK MSG( hund, wParem, IParem, in ) \ ((in)(hund, (Comm* )IParem), il)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    char *zph = ziphrase;
char *zsp = ziphpelling;
char *ssp = stateSpelling;
char *dsp = digitspelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cm->sendSyncHsg();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( int len + 0; *zph 1+ '\0'; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cm->checkMessage();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       esser( cm == 0 );
esser(( cm == comm(0) || cm == comm(1) || cm == comm(2) || cm == comm(3) );
                                                                                                                                                                                                                      choicetistStats.setOpenRecResult( digitSpelling );
                                                                                                                                                                                 return( len + (ssp l= stateSpelling) );
                                                                                                                                                                                                                                                            :'0\, = dsp. = d15. + d51.
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if ( fadigite *zph ) )
                                                                                                                                                                                                                                                                                                                                                                       while( ("sapro = "zapro = "zph++) != '(0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *dsp-+ * *zsp-+ * *zph-+;
                                                                                                                                                                                                                                                                                                                                                                                                            if( zsp 1= zipSpelling )
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                                                                                                                      MCOMCH.CPP 7-22-95 11:33a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void ZipHypoAC::removeAll( Recognizer* recog )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     public:
bool isNewWord;
SD_WORD word;
long value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   const cher* ltolip( long num )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   class ZipMypoAC:: public AC< ZipMypothesia >
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZipHypothesis::ZipHypothesis( Recognizer* recog, tong num, char* stateName )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static long right=0, wrong=0, predicted=0, addressConfidence=100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     class ZipHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 public:
    void removeAll( Recognizer* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return but + strien( but ) + 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZipHypothesis( Recognizer*, long zip, char* stateName );
ZipHypothesis( Recognizer*, const char*, const char*);
                                                                                                                                                                                                                                   strcpy( s, stateHame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                strcpy( spelling, !toZip( num ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              static char buf[ UII_PROMPI_(ENGIN ) = "00000";
                                                                                                                                                        isheshord = ( (word=recog->wordld( spelling )) == 0 );
                                                                                                                                                                                                  excpy( p, statellame );
                                                                                                                                                                                                                                                                           while( ("p = "s) 1= 1\0')
                                                                                                                                                                                                                                                                                                                                                                                                          char *p = phrase;
char *s = spelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          value : nua;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (toe( num, buf+5, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC< ZipHypothesis >::removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( int i=count(); i--; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char spelling[ UIT PROMPT_LENGIM ];
char phrase[ UIT_PROMPT_LENGIM ];
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( (*this){ i ].isNewNord )
recog->deleteNord( (*this){ i ].word );
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                                                                                                                7age 9 of 19
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bool Diguin::rerecogzip( long* foundzip, int* foundbistance )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  essers( word 1= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      StateZip" at = StateZip::findStateZip( stateSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              impState = recog. PnewState( "impzip" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog. setState( tmpState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   · foundlip · · 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static ZipHypoAC zipHypoAC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static SD_STATE tapState=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( isNewLord )
word = recog-rbuildWord( spelling, phrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     strcpy( phrase, zPhrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          strcpy( spelling, aSpell );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              value = atol( :Spell );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         essert( word i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   isHewWord = ( (word=recog->wordId( spelling )) == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( iskewlord )
word = recog->buildword( spelling, phrase );
  5
                                                                                                                                                                                                                                     fore int ist; icimax; **i )
                                                                                                                                                                                                                                                                          zipHypoAC.makeRoom( imax );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recog->addWord( word );
                                                                                                                                                                                                                                                                                                                                                  int (max=sips.count() + 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           cityUtt.resultHamme( buf, sizeof(buf) );
// could do more, resultHamme( ) )... watch out for canceladdress...
                                                                                                                                                                                                                                                                                                                                                                                      az->cityfolipat but, &lipa );
                                                                                                                                                                                                                                                                                                                                                                                                                             rips.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recog-> bddNord( word );
  10
                                                                                                                        MCOACH.CPP 7-22-95 11:33a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bool DigWin::isCancelBadLabelGoToSleep( NUMB hund )
                                                                                                                                                                                                                                                                              else if( recog->resultid() == goloSleepWord )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else if( recog->resultId() == badkabe(Word )
                                                                                                                                                                             ", appState = WAKEUP_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return( *found2ip I* -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recog->deleteState( impState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( recog->resultid() == cancelWord )
  30
                                                                                                                                                                                                                                               SetWindowTeat( GetDlgItem( hand, REC_ZIP_TEXT_ID ), "Sleeping" );
                                                                                                                                                                                                                                                                                                                                                                                                                                   strcpy( digitSpelling, Itolip( bedLabel.zip ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SetWindowText( GetDigitem( hund, REC_ZIP_TEXT_ID ), "Badkabel" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recog->beep( "canceled.wav" );
                                                                                                                                                                                                               recog->beep( "sleeping.wav" );
                                                                                                                                                                                                                                                                                                                          appState = ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                outComport();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    appState = ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          zipHypoAC.removeAll( recog );
                                                                                                                                                                                                                                                                                                                                                                                                     numerrors ++;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog->setCharmet( ch );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recog->setChannel( &zipUtt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UttChannel *ch * recog->getChannel(); []
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( recog->recog() sm 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( ziputt.resultCount() > 1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *foundDistance = liputt.resultDistance( | );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w = zipUtt.resultId( i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int i = (w == zipHypoAC(0].word);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO_WORD w = zipUtt.resultId();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for( i=0; i<imax; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (f( ziphypoAC( i ).word == w )
  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *foundZip = zipHypoACf i ].velue;
break;
                                                                                                                  Page 10 of 19
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void DigWin::itsGoodAdapt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void DigWin::itsBbd( MWD hund, UttChannel* tate )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // lets adapt...
recog > setUser ( cityUser );
recog > setCharval ( &cityUst );
recog > setCharval ( &cityUst );
recog > adapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recog->giveAwayUtt( toffe );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               appState = ZIP_SIATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SetWindowlest( GetDigitem( hund, REC_CITY_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SetWindowlent( GetOlgltem( hund, REC_STATE_TEXT_10 ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowText( GetDigitem( hund, REC_CITY_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             choiceliatStata.recordResuit( zigUtt.prompt() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     take->setPrampt( "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recog-skillutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SetWindowlext( GetDigitem ( hand, REC_STATE_TEXT_ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ist toste == ScityUtt SA IstaError )
                                                                                                                                                                                                                                                                                                                                                                                                                                  if lipAgreesWithState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SetWindowlext( GetDigitem( hund, REC_ZIP_TEXT_ID ), "BedLabel" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SetWindowText( GetDlgltcm( hund, REC_ZIP_TEXT_ID ), "no recognition" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  outCommPort();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cityUtt.setPrompt( "Backabel" );
                                                                                                                                                                                                                     recog->setUser( digitsUser );
recog->setVoc( digitsVoc );
recog->contAdapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strcpy( stateSpelling, "BadLabel" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strcpy( digitSpelling, ito2ip( badkabat.zip ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return 0;
                                                                                                                                                                                                                                                                                                             recog->setVoc( cityOlgitsVoc );
recog->contAdapt();
                                                                                                                                                                                                                                                                                                                                                                                  recog->setCharmel( &ripUtt );
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                                                                                                                                                             MONCH.OP 7-22-95 11:334
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void DigWin::onSpeech( MAND hund, SD_CNANNEL ch )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // get the utterance handle; do not wait for the end of the
// utterance since the recognition can proceed in parallel
// with the utterance collection
                                                                                                                                                                                                                                                  ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->setChannel( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( recog->notifyCharmel( ch, SD_CHANNEL_START ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assert( recog );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          appState . ZIP_SIATE;
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               switch( appState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SendDigitemHessage( hund, CHOICE_LIST_10, LB_RESETCONTENT, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               case ZIP_SIATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog-setUser( digitaVser );
recog-setVoc( digitaVoc );
recog-setState( "digit0" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SetVindowText( GetDigitem( hand, REC 21P TEXT ID ), "" );
SetVindowText( GetDigitem( hand, REC 51ATE TEXT ID ), "" );
SetVindowText( GetDigitem( hand, REC CITY TEXT ID ), "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          zipAgreesWithState = 0;
int wasGoodZipPhrase = 0;
bool isNewWord = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ripSpelling[ 0 ] = '\0';
ripPhrase[ 0 ] = '\0';
digitSpelling[ 0 ] = '\0';
exateSpelling[ 0 ] = '\0';
                                                                                                                                                                                                                                                                                                                                                                             recog->setState( "hole1" );
                                                                                                                                                                                                                                                                                                                                                                                                                               recog->setVac( cityVac );
                                                                                                                                                                                                                                                                                                                                     f( wasGoodZipPhrase )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  f( 0 == recog->contRecog() )
                                                                                                                                                                                                          if( istendard )
newlord = recog.>buildword( ripSpelling, ripPhrese );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  wasGoodZiphrase - isGoodZiphrase();
// ziphelling is "01913 massachusetts"
// dipitSpelling is "01913"
// stateSpelling is "massachusetts"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog-vesultHame( zipPhrase, sizeof( zipPhrase ) );
// zipPhrase is #0 | 0 | 3 massachusetts#
                                                                                                                                                                                                                                                                                  ishewlord = (newlord=recog->wordld( zipSpelling )) == 0;
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** 0, (040R0 )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                * ateSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ** (Spelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : d)
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( cancel Word ## 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     i(( recog->recog() == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  carcelVord = recog->wordid( "canceladdress" );
badt abelMord = recog->wordid( "bodlabel" );
goloSleepMord = recog->wordid( "potosleep" );
wakeUpMord = recog->wordid( "wakeup" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               else if( ussGoodZipPhrase so & && recog->resultid() == newlo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ii( addressConfidence < 6 || (wasGoodZipPhrase < 5 && recog->resultId() == newWord) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // clean up
if( newford )
    recog->deleteWord( newford );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                addressConfidence = recog->confidence();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for( int i = 0; i < recog->resultCount(); **i )
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetWindowText( GetDigitem( hund, REC_STATE_TEXT_ID ), st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sencibligitembessage( hund, CHOICE_LISI_ID, LB_ADDSTRING,
                                                                                                                                                                                                                                                                                                                                                                                                               citylda.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SetWindowText( GetOlgitem( hund, REC_ZIP_TEXT_ID ), digi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->resultHame( buf, sizeof( buf ), i );
                                                                                                                                                                                                                                                                                                                             zipAgreesWithState = latrcmp( zipState, stateSpelling );
                                                                                                                                                                                                                                                                                                                                                                        sz-vzipToStateCities( zipValue, AzipState, &cityNypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                        cityflypo.removeAil();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 State2ip* az = State2ip::findState2ip( ripvalue );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              zipUtt.setPrompt( zipPhrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          itsBad( hund, &ziputt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recog->addWord( newWord );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ripvelue = etol( digitSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog->giveAwayUtt( &zipUtt );
                                                                                                                                                                                                                                                                                       if( zipAgreesWithState && sz->isPure() )
                                                                                                                                     ACOMCH.CPP 7-22-95 11:33e
                                                                                                                                                                                                                                                cityUtt.setProspt( "pureState" );
                                                                                                                                                                   recog-willutt();
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                                                                                                                                                                                                                                                                                                                                                                                             =
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARO CITY_STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // we are pointed at the "right" voc and state
                                                                                                                                                                                                                                                                                                                                                                                           Octugoutput( DBF_ERROR, "Just a Test" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // clean up
if( newford )
recog->deleteword( newford );
                                                                                                                                                     if( 0 == recog->recog() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SD_STATE tapState = recog->newState( *tapcity* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int i = ( D == recog->recog() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      itsBad( hund, &ziputt );
                                                                                                                                                                                                     for( i = citylds.coint(); i--; )
recog->eddword( citylds[ i ] );
                                                                                                                                                                                                                                                                                                                                                                                                                                   recog->setState( tmpState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // else recog failed!!!
                                                                                                                                                                                                                                                                                  for( i = 0; i < recog->result(count(); **i }
recog->addword( recog->result(id( i ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       breek;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         itsBad( hund, &riputt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // else itsBad( hand, &ziputt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( isCancelBadLabelGoToSleep( hund ) )
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recog.vaetUser( cityUser );
recog.vaetVoct cityVoc );
recog.vaetState( stateSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        appState = CITY_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( i = cityHypo.count(); i--; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( u )
citylds.add( u );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SO WORD w * recog->wordid( cityMypol | ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 appState = 217_STATE;
                                                                                                                                 7- 12 of 19
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as Ext_10 ), zipState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            so 0, (Duoko )but );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .. 0 ), buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ∷
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for( i=0; i < cnt; ++i )
cityResultids.edd( cityUtt.resultid( i ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cityfleaultida.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static AC < SO_WORD > cityResultIds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tong found2 ip = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // clearup first...
recog->deleteState( tapState );
                                                                                                                                                                     // if we got here things didn't match up...
// try rerecognizing zip with the best city's zips...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           int cat a cityUtt.resultCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( isCancelBadLabelGoToSleep( hund ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for( i = 0; i < recog->resultCount(); ++i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           addressConfidence = recog->confidence();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for( i=0; i<cnt; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog->giveAmayUtt( &cityUtt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hreak;
  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SeruDigitemMessage( hund, CHOICE_LIST_ID, LB_ADDSTRING,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog-presultName( buf, sizeof( buf ), i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for( int j=citylds.count(); j..; )
                                                                                                                            MODACH.OP 7-22-95 11:33a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( citylds( j ) on cityResultIds( i ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SetWindowText( GetDigitem( hund, REC_CITY_TEXT_I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // zip matches some city cityUtt.result( i )-vgetHame( buf, sizeof( buf )
                                                                                                                                                                                                                                                                goto EndOfSwitch;
                                                                                                                                                                                                                                                                                                                                      outCommort();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cityUtt.setPrompt( buf );
                                                                                                                                                                                                                                                                                                       itsGoodAdapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( lzipAgreesWithState )
                                                                                                                                                                                                                                                                                                                                                                                             stropy( stateSpelling, zipState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetWindowText( GetDigitem( hund, REC_STATE_T
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            es et foundzip),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;( $ 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>.</u>
    30
                                                                                                                                                                                                                                                                  CANE WAKEUP_STATE:
                                                                                                                                                                                                                                                                                                                                          break;
                                                                                                                                                if( 0 == recog->recog() )
                                                                                                                                                                                       recog.>setState( (SD_SIATE )0 );
                                                                                                                                                                                                                            recog->setUser( cityUser );
recog->setVoc( cityVoc );
                                                                                                                                                                                                                                                                                                                                                                                                                                 // clearup first...
recog.>deleteState( impState );
                                                                                                                                                                                                                                                                                                                                                                            // no recognition...
itsBad( hand, &cityUtt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // else its Wrong...
itsBed( hand, &cityUtt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( rerecoglipt bloundlip, bloundlistance ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int foundlistance;
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            it( addressConfidence < 0 )
addressConfidence = 0;</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               addressConfidence = 100 - foundDistance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if addressConfidence > 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bresk;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  zipAgreesWithState - istrompt StateZip::findStateNam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cityUtt.setPrompt( buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SetWindowText( GetDigitem( hund, REC_CITY_TEXT_ID ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             stropy( sa-i, stateSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cityUtt.result()->getName( buf, sizeof( buf ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SetWindowText( GetOlgitem( hund, REC_21P_TEXT_ID ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              riputt.setProapt( buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for( char "sambuf; ("sa++ = "s++) }= '\0'; }
*sa++ = ' ';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        outCommPort();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           strcpy( digitSpelling, s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // everything matches... zip state city const char *s = itolip( foundlip );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         itsGoodAdapt();
                                                                                                                      Page 13 of 19
    40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stateSpelling );
                                                                                                                                                                                         // open Recognition
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EndDiSwitch:
SetWindowText( GetDigitem& hund, COMFIDENCE_TEXT_ID ), itom( addressConf
sp idence, buf, 10 ) );
                                                                                                                                                                                                                                                                                                                                                       void DlgWin::onSysCommand( HUMD hund, UINT cmd, int, int )
(
                                                                                                                                                    bool findOrCreate( char* desifile, char* srcfile )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      z> "Awake" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; "" );
                                                                                                                                                                                                                                                                                                                                  switch( cad )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::
::
                                                                                                                                                                                                                                                    case SC CLUSE:
    EndDialog( hund, 0 );
    break;
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SetWindowleat( SetDigitem( hund, PROMPT_TEXT_ID ), sayPrompt( appState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( recog->peebur() )
postSpeechEvent( (SD_CHANNEL )), SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recog->killull();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  $0_WORD wordloCompareWith = recog->resultid();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( recog->resultId() == wakeUpWord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recog->deletablord(wordloCompareWith);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recog->setState( "wakeup" );
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recog->addWord( wordToCompareWith );
                                                                                                            MODACH.OPP 7-22-95 11:33a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SetWindowText( GetOlgitem( hund, REC_CIIY_TEXT_ID ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowText( GetOlgitem( hund, MEC_STATE_TEXT_ID )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SetWindowlext( GetBigitem( hand, REC_ZIP_TEXT_ID ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                appState = ZIP_STATE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recog->beep( "awake.wav" );
15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // open Recognition
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         yold DigHin::setDigitsUser( char* usrName )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'if( findOrCreate( digitsUser, usrName ) == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         digitableer[ len - 2 ] = 'd';
                                                                                                                                              if( findOrCreate( cityOlgitsVoc, digitsVoc ) == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int len = strlen( digitsUser );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     strepy( digitaliser, usrkame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           close( w/d );
                                                                                                                                                                                                                                                                                                                                                              if( tolower( digitsUser( len -1 ] ) == 'm' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( wid sa .1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int wid a open( destrile, o_RDONLY | O_BINARY );
  30
                                                                                                                                                                                                           cityOigitsVoc = femCityOigitsVoc;
digitsVoc = femDigitsVoc;
                                                                                                                                                                                                                                                                                                       cityOigitsVoc = malCityOigitsVoc;
digitsVoc = malDigitsVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MessageBox( h\u00e4rd, "Could not create a new digits user file", "User Models Error", NB_TASKNODAL | MB_ICONSIDE | MB_OX );
                                                                                                                                                                                                                                                                                                                                                                                                                           EndDialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  close( rld );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 char buf( 2 * 1024 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            wid = open( destrite, o_wnowly | o_Blunky );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      wid = creatnew( destfile, fA_NORMAL );
close( wid );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( rfd as -1 )
return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           while (byteshead = read (rfd, buf, siteof(buf) ) ) | 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int byteskead;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int rid = open( srcfile, O_SDONLY | O_BINARY );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( wfd == -1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 close( rfd );
return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                while( bytesRead )
bytesRead -= write( wid, bui, bytesRead );
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void Digwin::onCommand( NUND hund, UINT cmd, MAND, UINT )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               switch ( card )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Case SEIUSER_BIN_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            case EXII BIN 10:
Enchialog( hund, 0 ):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( recog && channel && recog->getUser() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       case USR_COMBO_ID:
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     case CHOICE_LISI_IO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                case fix ERRORS BIM ID:
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SetWindowless( GetDigitem( hund, fix_ERRORS BIN_ID ), fixError 7 "fix Errors" : "Ignore Afrors" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fixerror a Iffixerror;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MessageBox( h\nd, "Could not create a new digits Voc file",
"User Vocabulary Error", MB_IASKMODAL | MB_ICONSIDP | MB_OX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          frubialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              channel.>flush();
recog->savedser();
                                                                                                                                                                                                                                                                                                                                                                                                                 bool (affaite = tolower( usrifame( strien( usrifame ) - 1 ) ) x= 'm';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           char unramed UTT_PROMPT_LENGTH 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( |GetDigitemText( hund, USR_COMBO_ID, usrName, sizeof(usrName) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                       HOURSOR hoursor = Settursor( LoedCursor( 0, IDC_WAIT ) );
                                                                                                                                                                                                                                                                                                                                                                           III recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    breek;
                                                                                                                                                                                                                                                                                                               char buffer[ 128 ];
recog-ygetUsername( buffer, sizeof( buffer ) );
                                                                                                                                                                                                                                                                         if( fileHameCmp( usrName, buffer ) )
                                                                                                                                                            channel-villaten( FALSE );
                                                                                                                                                                                                                                   bool wastistening a charmet-rististening();
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                                                                                                                                              MODACH. CPP 7-22-95 11:33a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MessageBox( hand, "Could not open either digita.voc or cov tall.voc or user file!",
  30
                                                                                                                                                                       if( recog settliser( cityliser ) == 0 || recog settliser( cityliser ) == 0 || recog settliser( digitaliser ) == 0 || recog settliser( digitaliser ) == 0 || recog settliser( digitaliser ) == 0 ||
                                                                                                                                                                                                                                                                                                                                     strcpy( cityUser, usrName );
                                                                                                                                                                                                                                                                                                                                                                                recog = new Recognizer( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                        if( channel = new WindowstiveChannel();
                                                                                                                                                                                                                                                                                               setDigitsUser( usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( ismale )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      digitsVoc = femDigitsVoc;
cityVoc = femCityVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        digitsVoc = melDigitsVoc;
cityVoc = melCityVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recog->closeVoc( cityVoc );
recog->closeVoc( digitsVoc );
recog->closeVoc( cityUser );
recog->closeVser( cityUser );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( wastistening )
channel->listen( TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( recog->setUser( cityUser ) == 0 ||
recog->setVoc( cityVoc ) == 0 ||
recog->setVoc( cityVoigitsVoc ) == 0 ||
recog->setUser( digitsUser ) == 0 ||
recog->setVoc( digitsVoc ) == 0 ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  strcpy( cityUser, usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       setDigitsUser( usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( ishele )
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     digitsVoc = malDigitsVoc;
cityVoc = malCityVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 digitsVoc = femDigitsVoc;
cityVoc = femCityVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // recog == 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Enabliating( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Digwin::name, MB_ICONEXCLAMATION | MB_OK );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NessageBox( hund, "Could not open either digits voc or ctall so voc or user file!",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ** * 011" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -> 0 )buf );
                                                                                                                                                                                                                                                                                                                                                                             ** 0 )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                ** )/total );
                                                                                                                                                                                                                                                                                                                                                                                                                                                         * 0 )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Case MICROPHONE BIN 10:
  5
                                                                                                                                                             breek;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TO THEOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SetVindowTest( GetOigitem( hund, MICROPHONE BIN ID ), recogniseListening() ? "EMicrophone On" : "Emicrophon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog-vlisten( trecog-vististening() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetVindowlext( GetOlgitemt hund, PROMPT_TEXT_ID ),
recog-vist(steming() ? sayPrompt( appState ) : "" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( |recog-vististening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EnableWindow( GetOlgitem Nand, SETUSER_BIN_ID ), TALSE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Enablewindow( GetDigitem( hund, MICROPHONE_BIN_ID ), IRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SendDigitemWessage( hund, CHOICE_LISI_10, LB_RESEICONIENI, 0, 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            numerrors . 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Setfocus( GetDigitam( hund, WORD_PAUSE_SLIDE_ID ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 charmel. postSpeechEvent );
                                                                                                                                                                                                                                                                                                                                                                                             SendDigitamblesseget hund, CHOICE_LIST_ID, LB_ADDSTRING, O, (DUCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sprintf( buf, "urong:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SendbigitemHessage( hund, CHOICE_LIST_ID, LB_ADOSTRING, O, (DUCA
                                                                                                                                                                                                                             // initialize vu metar sattimer( hund, VUIIWER_ID, 20, (TIMERPROC )0 );
                                                                                                                                                                                                                                                                                                                                         Killlimer( hard, WIIMER_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                   sprintff buf, "predicted: XId XIdX", predicted, (100°predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SendDigitoeMessage( hund, CHOICE_LIST_ID, LB_ADDSIRING, 0, (DMOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sprintf( buf, "right: Xid Xid\X", right, (100*right)/total
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( total ** 0 ) total * 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EndDialog( hand, 0 );
10
                                                                                                                                       MONCH.OP 7-22-95 11:334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Digwin::name, MB_ICONEXCLANATION | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   XId XId\X", wrong, (100°wrong)/total )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ::::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void Digitin::onTimerDrawWU( NUMD hund, UIMT id )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  wordPause = GetScrollPost GetDigitem( hund, WORD_PAUSE_SLIDE_ID ), S => B_Cit_);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( id == WITHER_ID && channel->ististening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   case WORD_PAUSE_SLIDE_ID:
      30
                                                                                                                                                                                                          "I selectObject( hdc, hOldBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rc.teft 95;
rc.right 95 61;
rc.top 116;
rc.bottom 116 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        breek;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RECT re;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEP_S_STATUS fepinfo;
                                                                                                                                                                                                                                        Rectangle( hdc, rc.left, rc.top, noiser(ght, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GetClientRect( hvu, &rc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MAND have = GetDigitem( hund, VUMETER_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fep_Status( (8001° )&test, &tepinfo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         boot test;
                                                                                                                                                             DeleteObject(hBrush);
                                                                                                                                                                                                                                                                                                                                                                                  speechright = unit * fepinfo.speech_level * speechleft;
                                                                                                                                                                                                                                                                                                                                                                                                                        noiseright = speechleft = unit = fepinfo.noise_level;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               unit = (rc.right · rc.left) / fepinfo.mex_level;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int noiseright, speechleft, speechright, unit;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NDC hdc = GetOC( hvu );
                                                                                                                                                                                                                                                                                     HBRUSH hOldBrush = (HBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                            // draw speech createSolidBrush( RGB( 255, 0, 0 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          speechlask->setPar( "word-pause", (short )wordPause );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( wastistening )
  recog->listen( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bool wastistening = recog->ististening();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( wastistening )
  recog->listen( 1 );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               yold Olguin::orDestroy( NUMO hund )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kittlimer( hund, WITHER_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for( int 1=0; i4; **i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( speechfask )
      5
                                                                                                                                                                                                         PostQuitMessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            delete speechlask; speechlask = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            eltyder.killute();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Background
Rectumple( hdc, speechright, rc.top , rc.right, rc.boltom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                III commit i I )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ReleaseOC( hvu, hdc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DeleteObject( hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rectangle( hdc, speechleft, rc.top, speechright, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ii recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SelectObject( hdc, hOldBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hOldBrush = (MBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // draw speech
hBrush = CreateSolidBrush( RGB( 0, 255, 0 ) );
                                                                                                                                                                                                                                                                                                                                                            f( commformat( i ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ( channel )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         delete recog; recog = 0;
                                                                                                                                                                                                                                                                                                                      delete commformat( i );
                                                                                                                                                                                                                                                                                                                                                                                                   commit 1 = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                       delete commi i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      choiceListStats.printStats();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              delete channel;
channel = 0;
                                                                                                                                                                                                                                                                                 commormat(i) = 0;
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                                                                                                                                           MODACH. CPP 7-22-95 11:33a
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                                                                                                                                               int PASCAL Virtaint HINSTANCE binst, HINSTANCE SPrevinstance, LPSIR Ipaccadine,
                                                                                                                                                                                                                                  // Static Global Veriables of Appwin HVMD Appwin: hland; HVMD Appwin: hland; HVMD Appwin: heat; bool Appwin: messageHardled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      class Appuin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIANA
H. ADNIA
MATTA MATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             public:
static long fAR PASCAL_export wndProc( HWMD, UTHT, WPAKAN, LPAKAN );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         handleffessaget UM_COMM_SEND_SYNC_MSG, hand, wharam, IParam, onCommSandSy as noting );
                                                                                                                                                                                                                                                                                                                                                                                                                          // wndProc() services
static bool orCreate( MAND hand, CREATESTRUCT FAR* (pCreateStruct );
static void orDestroy( MAND hand );
static void orDestroy( MAND hand );
static void orClose( MAND hand );
static void orClose( MAND hand );
static void orCommand( NAND hand );
                                                                                                                                                                                                                                                                                                                                                                     friend int PASCAL WirMain( MINSTANCE, MINSTANCE, LPSIN, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              static MUND hund;
static MIASK hlask;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return messageMandled 7 returnValue : 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      messageHandled • TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       itatic bool messageMandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               long returnValue = 0;
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              handleHessage( WM_INITDIALOG, hund, wParam, (Param, q
handleHessage( WM_EESTROY, hund, wParam, IParam, orga
handleHessage( UM_ECOMMAND, hund, wParam, IParam, orEn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              minimining );
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::
                                                                                                                                                                                                                           void Appuln::onCommand( NUND hund, UINT cmd, NUND, UINT )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ** int /* nCmdShow */ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Showlindow( Applin::hWnd, SM_HIDE );
Showlindow( hWnd, nCmdShow );
UpdateWindow( hWnd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HWO hund = CreateWindow( name,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ::hinstance * hinst; // the global hinstance for the sliderctl slideControl.libMainInit(); // register the slider class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SetMessageQueue( 64 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static const cher name!
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                              while ( GetHessage ( Long, 0, 0, 0 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSG mag;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   assert( hwnd == AppWin::hWnd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( |hPrevinstance )
                                                                                                                                                                                                                                                                                                                                                        return mg. Warm;
                                                                                                                                                                                                        Switch ( cad )
                                                                                                                                                                 Case OH_INIT_DIALOG:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // undclass.hlcon = to
// undclass.hlcursor = to
undclass.hbs@ctground = 0;
undclass.lpsgMenuMamo = 0;
undclass.lpsgMenuMamo = name;
                                                                                                                                                                                                                                                                                                                                                                                                           PrenslateMessage( Lmsg );
DispatchMessage( Lmsg );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RegisterClass( &undclass );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             undeless.lpfnWndProc
undeless.cbClsExtre
undeless.cbWndExtre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNIDCLASS undcloss;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      andclass, hinstance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ess. hCursor
10
                                                                                                                                             HODACH, CPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      = "OragCpp";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US OVERLAPPEDWINDOW | US_CLIPCHILDREN,
CW_USEDEFAULT,
CW_USEDEFAULT,
CW_USEDEFAULT,
CW_USEDEFAULT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hinst;
lpszCadLine );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Applin::und roc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      coadicon( 0, MAKEINTRESCURCE( IDI_MY_ICOM ) );
coadcursor( 0, IDC_ARROW );
                                                                                                                                                 7-22-95 11:334
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bool AppWin::onCreate( HUND hund, CREATESIRUCT FAR* )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void Applin::onClose( MUND hand )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void Applin::onMCDestroy( MUND )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        long FAR PASCAL _enport AppHin::wn:Droc( HWAD hund, UINT message, WPARAM wParam, a> tPARAM Param )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void Appliin::onDestroy( MMD )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ţ
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DestroyWindow( hWnd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PostMessage( hund, LM_COMMAND, LM_INIT_DIALOG, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PostQuitHessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hund = hund;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hlask = GetCurrentlask();
                                                                                                                                                                                                                                                                                                                                                                                                 long returnValue = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                   messageHandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        instance );
                                                                                                                                                                                                                                                                                                                                                                witch( message )
                                                                                                                                                                                                                                           handleHessape (MM_CREAIE, hund, wParam, IPa
handleHessape (MM_CRESIED), hund, wParam, IPa
handleHessape (MM_CROSE, hund, wParam, IPar
handleHessape (MM_CROSE, hund, wParam, IPar
handleHessape (MM_CROSE, hund, wParam, IPar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            messageHandled = FALSE;
                                                                                                                                                                                            messageHandlad = FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PostNessage( hund, UM_CLOSE, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DialogBox( binstance, "TestDialog", 0, (DiGPROC )ipin );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( ipin );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // create dialog box proc instances for use later static FARPROC |piguint:mmcProc, h
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## EP 0 762 385 A2

5				-	·		return( messageHandled 7 returnValue : OefWindowPro	break;
15	VCDACH.079 7-22-95 11:33e						return( messagehandled ? returnYalue : OefWindວພProc( hund, message, ພParam, (Param ) );	
20							arem ));	
25			·				<del></del>	
30 35						·		
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<b>45</b>	•	4 <sup>0.4</sup>					·	
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#11 0EBUG || UNIT_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACBase::ACBase( size_t entSize, unalgned iniSize, unsigned incSize ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITML || SMB30 11#
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #include "arrcoll.h"
#include "defa.h"
                                                                                                                                                                                                                                                                                                                                                                      #endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int ACBase::add( const char& e, int index )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     yoid ACBase::removeEntry( unsigned index )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              arrayUsed . 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     incrementSize = ( incSize <= 0 ) 7 arraySize :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           arraySize = ( iniSize <= 0 ) 7 6 : iniSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return index;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    array = new char( arraySize * entrySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entrySize = entSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assers( entSize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Copyright (c) 1991-1995 by Dragon Systems, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( index == -1 )
    return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      index = makeRoom( 1, index );
                                                                                                                                                                                                                                                                              if ( index < arrayused )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         memcpy( array +index*entrySize, &e, entrySize );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           errcoll.cpp
base classes to manage Array Collection
                                                                                                                                                                                 ·· arrayUsed;
                                                                                                                                                                                                                   memmove( array + index*entrySize, array + (index + 1)*entrySize, (arrayUsed - index -1) * entrySize );
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                                                                                                                                      MARCOLL.CPP 7-22-95 11:354
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         incsize;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #endif
#if DEBUG || UNIT_7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #endif
#if 0880G [] UNII_S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int ACBase::find( const char& v, CompareACEntries cup, int sorted.ist ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #if DEBUG || UNIT_6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int ACBase::find( const char& v ) const
                                                                                                                                                                                                      white( lowIndex <= highindex )
                                                                                                                                                                                                                                                       if( lastfound > highladex | | lastfound < 0 )
lastfound = { lowladex + highladex + 1 ) / 2;</pre>
                                                                                                                                                                                                                                                                                                                                                   int testPosition=0, lowIndex=0, highIndex=count() -1, caps-1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( sortedList )
return find( v, cmp, &sortedList );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for( int i=0, ii=0; i < arrayUsed; ++i, ii+=entrySize )
                                                                                                                                                                                                                                                                                                                   static int tastfound = -1;
                                                                                                                                                                                                                                                                                                                                                                                                                              // returns -1 if it cannot find the entry
// if the compare function is given, it does a log2 search
// if position is given and the entry is not found, position will
// the the proper position this item should be added at;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              essert( cmp );
                                                                                                                                                                                                                                                                                                                                                                                           essert( compare );
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if ( Incommy) (void*) &v. array + ii, entrySize ) ) return i;
                                                                                                                                                                                 testPosition = testfound;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( int i=0, (i=0; i < arrayUsed; ++i, li*=entrySize )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( lcmpt (void") &v, array + ii ) ) return i;
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#if ocous || unit_9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int ACBase::indexOf( const char& e ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #endit
#if DEBUG || UNIT_B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int ACBase::makeRoom( int numloAdd, int index )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  essert( numloAdd > 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       assert( arrayUsed <= arraySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( Lermarray LL LecalastEntry() ) return (Le - array)/entrySize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return (cap == 0) ? testPosition : -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               iff index == -1 )
index = errayUsed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( position ) *position * testPosition * (cap > 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( index <= arroyUsed ); // if( index > arrayUsed ) index=arrayUsed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( arrayUsed+rumloAdd > arraySize )
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unsigned newSize = erraySize + incrementSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         else if( cmp > 0 )
lowIndex = testPosition + 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cmp = comparet (void*) &e, (void*) (array + (testPosition*entrySize)) );
                                                                                                                                                                                                    if( InewArray ) {
   assert( newArray );
   return -1;
                                                                                                                                                                                                                                                                         cher *newArray = new char{ newSize * entrySize };
                                                                                                                                                                                                                                                                                                                                    if( newSize > ((unsigned)Oxffff / entrySize) ) (
    essert( newSize < ((unsigned)Oxffff / entrySize) );
    return -1;</pre>
                                                                                                                                                                                                                                                                                                                                                                                                              if( newSize * arraySize+numToAdd )
newSize=arraySize+numToAdd;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lastfound = ( lowIndex + highIndex ) / 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  else // cmp < 0
highlandex = testPosition - 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              iff casp == 0 ) break;
                                                                                                                                                 incrementSize += (incrementSize>>2) + 48/(1 + (47/incrementSize) );
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                                                                                                                      AMICOLL.CPP 7-22-95 11:35.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #endir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return index;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          arrayUsed += numloAdd;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acamove( array +(index+numloAdd)*entrySize,
    array + index*entrySize,
    (arrayUsed -index)*entrySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 arraySize = newSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    delete () array;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           memcpy( newArray, array, index*entrySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    array = newarray;
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                                                                                                                      Page 2 of 2
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static char feeDipitavocii
static char malitipivocii
static char malitipivocii
static char malitipitavocii
static char cityvocii o
static char dipitavoc o;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 finctude (windows.h)
finctude (string.h)
finctude (dos.h)
finctude (dos.h)
finctude (stdilb.h)
finctude (stdilb.h)
finctude "drapcpp.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // this is the instance of the control bynStideControl slideControl; // she estern HUSTANCE hinstance; // him HUSTANCE hinstance; // him
                                                                                                                                                                                                                                                                                                                                                                                                                                     Steffine handleHessage( message, h\hd, wParam, lParam, fn ) \
    cose (message) : returnYelue = H\h\hdle_BB message( (h\hd), (wParam), (lParam
    n> ), (fn) ); break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #include "fepext.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #include "slidectl.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          class Olgwin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Modeline LINE_SIZE BD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #include "utrain.h"
                                                                                                                                                                                                                                       protected:
                                                                                                                                                                                                                                                                               public:
    static long FAR PASCAL _export wndProc( NUMD, UINT, UPARAN, LPARAN );
    static NUMD h\u00e4nd;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Copyright (c) 1991-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                              static bool messageHandled;
static bool sawError;
static bool ignoreErrors;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Training app to train USR files to user's voice. Not
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                                                                                                                                      WIRAIN. COP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  by Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // when we call DgnSlideControl::libMainInit()
// hinstance must be initialized...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "ctall.vof";
                                                                                                                                      7-22-95 11:35
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        done in noise.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Speechlaske
Recognizere
UttCharnele
                                                                                                                                                                                                                                                                                                                                                                                                 static ConfigCommands cfgCommands[] = {
    ( "set", setCommand ),
    ( 0, 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ****
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            static char* setCommand( char* );
                                                                                                                                                                                 static char userPathString( 256 ) * "."; static char* setUserPath( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        static char* setWothing( char* )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     struct ConfigCommands
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static void reportError( int code, char far *message );
static void SD_CALLBACK _export postSpeechEvent( SD_CMANNEL, SD_CMANNEL_EVEN
a> f );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static bool onInitDialog( HAMD hAmd, MAMD topCntrt, long );
static void orDestroy( HAMD hAmd );
static void orCommence( MAMD hAmd );
static void orCommence( MAMD hAmd, UINT cmd, HAMD x, UINT y );
static void orSpeech( MAMD hAmd, SD CHANNEL ch );
static void orTimerDrawAU( MAMD hAmd, UINT id );
                                                                                                                                                                                                                                                                               return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static Speechlask *speechlask;
static UttCharnel *charnel;
static Recognizer* recog;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         const char* name;
char* (*command)( char* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        static char* name;
static short wordPause;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // undProc() services
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static void setupPrompt( NUMD hand );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int PASCAL WirMein( HIMSTANCE, HIMSTANCE, LPSTR, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Olgwin::Mand;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::messageHandled;
Digwin::channel;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // speech driver task
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 į
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static ConfigCommands
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              static char* setEndOfSpeech( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        static char* setStartOfSpeech( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static chor* selfepPar( womb id, char* value ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( setfepPar( 12, value ) )
return "EndOfSpeech Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( setFepPar( 13, value ) )
return "StartOfSpeech Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return "Par Not Set";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ("Alberta",
("BritishColumbia",
("Labrador",
("Manitoba"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ( "Backabet"
( "FirstDmyAir",
( "MemtDmyAir",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ( "StartOfSpeech",
( "EndOfSpeech",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ( anley. ))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      strcpy( userPathString, value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( char "s = value; "s && lisspace( "s ); **s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "? ipRange",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Comport.
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            v = (MORO )atol( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fep_Setpar( SUPER_USER, id, v );
10
                                                                                                                                                                                                                                   section hing ) . sectio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         setNothing),
setNothing),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           setUserPath ),
setStartOfSpeech ),
setEndOfSpeech ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   setMothing ),
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                                                                                                                                                                                           11:350
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    static char* setCommand( char* var )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void perseConfig( const char* filename )
                                                                                                                                                                                                                                                                                                                                                                       char *errorMessage = ( cfgfile == 0
? "could not open UPS.CFG file"
: 0 );
                                                                                                                                                                                                                                                                                                               cher line( 256 );
Ing | Inelumber = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 file *cigfile = topen( filename, "r" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *value** * '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( *value := '\0' )
return "no value found in set command... ex: set variable = value";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             while( isspece( "var ) )
                                                                                                                                                                                                                                                   while(errormessage == 0 && fgets( line, sizeof( line ), cfgfile ) i= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return "unknown set variable";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( int 1=0; setCommands( i ].tume 1= 0; ++i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if ( I found Equal )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bool foundEqual = (*value es 's');
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              while( isalnum( "value ) || "value == '_' );
++value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chare value = var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (0,0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ( "Mexico",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Saskatchevan",
"YukonTerritory",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Ontario",
"PrinceEdwardIsland",
"Quebec",
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "HoveScotie",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( stricep( var, setCommends( i ).name ) *= 0 )
  return setCommends( i ).commend( value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             while( isspace( *value ) )
++value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      evalue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 iff "value I^{n-1}" sign in set command... ex: set variable = value";
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           setNothing),
setNothing),
setNothing),
setNothing),
setNothing),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             serNothing ),
                                                                                                                                                                                 Page 2 of B
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```
bool DigMin::aninitDielog( MWWD hDig, MWWD, long ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MessageBox( DigWin::hWnd, errorNessage, errorlype, MB_OX } MB_ICONEXCLAM => AllOM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( cigfile )
fclose( cigfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( errorMessage )
                                                                                                                                                                                                                                                                                                                                        speechlask = new Speechlask( name, reportError );
                                                                                                                                                                                                                                                                                                                                                                                   1910s . punt
                                                                                                                                                                                                                                                                                                  Tecog = 0;
                                                                                                                                                                                               // set up the usr listbox if( Ifindfirst( **.un?*, &attrib, FA_MORMAL ) )
                                                                                                                                                                                                                                                            struct fiblk attrib;
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cher errorType( 40 ) = MPS.CFG error, line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             while( fisspace( "value ) && "value != "\0" ) 
++value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               while( isopace( *var ) )
++var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char *value = var;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( *var == '#' || *var == '\0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ++ ( ineNumber;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char evar a line;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            itoat lineHumber, errorType + 20, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for( int i=0; cfgCommands( i ].name != 0; **! )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( *value 12 1\0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               *velue++ = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    while( isspace( *value ) )
**value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( stricep( var, cfgCommands( i ].name ) ** 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    errorMessage = cfgCommands[ i ].command( value );
10
                                                                                                                              VIRAIN.009 7-22-95 11:35a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ج</u>َ
  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                void DigMin::reportError( int code, char far *message )
{
                                                                                                                                                                                                                                            ) // EventHendler
                                                                                                                                                                               scefille MANDLE_UM_CHANNELSTARIChund, uParam, IParam, in) \
((in)(hund, US_CHANNEL )uParam), OL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SendDigitesMessage( hOly, USR_COMBO_IO, CB_ADDSTRING, O, (DWORD) att => rib.ff name );
) while( lfindnext( &attrib ) );
                                                                                                                                                                                                                                                                                If( 0 == PeekMessage( &mmg, hund, um_CNANNELSTART, UM_CNANNELSTART, PM_NOREM
-> OVE | PM_NOTIELD ) )
POSEMessage( hund, um_CNANNELSTART, (NORD )ch, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 => attrib.ff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sawError = YES;
if( ignoreErrors )
    return;
ignoreErrors = YES;
                                                                                                                                                                                                                                                                                                                                                                                                         essert( eventin == SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Throw up an error message
char buffer( $12 );
sprintf( buffer, "An error has occurred\n code = kd\n message = ka",
sprintf( buffer, "An error has occurred\n code, message );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SendDigitemHessage( hDig, WORD_PAUSE_SLIDE_ID, WI_SETSCROLLPOS, 0x0100, 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SendbigitedMessage( holg, word_PAUSE_SLIDE_ID, wM_SETSCHOLLDWIGE, 0, 0x02000 064L );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                speechlash->setPar( "adapt-tolerance", (short )] );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // set up the prompt listbox
if( !findfirst( "".txt", fattrib, FA_MORNAL ) )
                                                                                                                                                                                                                                                                                                                                                                     NSG mg;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ignore£rrors = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( stricept message, "Bad token" ) )
      30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SendDigite=Wessage( Notg, PROWPT_COMBO_ID, CB_ADOSTRING, 0, (DWORD) trib.ff_name );
) white( ifindhext( Astrib ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MessageBox( hWhd, buffer, "Winialk SDAP! Error", MB_IX ); MB_IX );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // terminate... kill the hTopParentWindow
if( hWnd )
PostMessage( hWnd, LM_CLOSE, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // prevent recursion
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                                                                                                                         740 3 of 8
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void DigWin::onSpeech( HUMD hund, SD_CHANNEL ch )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void DigWin::setupPrompt( NWND hund )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int numbigits( const char* s )
                                                                                                                                                                                                                                                                                   SetVindowText( GetDiglice( hWnd, SAY SIATE_TXT_ID ),
( i == 1 ? "Say:" : =0 );
SetVindowText( GetDiglice( hWnd, SAY CITY_TXT_ID ),
( i == 2 ? "Say:" : "# ) );
                                                                                                                                                                                                                                                                                                                                                                                  SetWindowlext( GetOlgitem( hWnd, SAY ZIP IXI_ID ), ( i == 0 7 "Say:" : "8 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SetWindowText( GetDigitem( hind, PROMPI_CITY_IXT_ID ), city8ufP );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SetWindowText( GetOlgitem( hund, PROMPI_SIATE_IXT_ID ), stateBufP );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowText( GetOiglicen( hWnd, PROWPI_ZIP_IXI_ID ), zipBuiP );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cher sipBufP[ LINE SIZE ];
cher stateBufP[ LINE SIZE ];
cher cityBufP[ LINE_SIZE ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( frecog.>ististening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         iff i l= -1 && recog->peekPromptf cityBufP, LINE_SIZE, peekOffsetf 2 ] ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int* peekOffset = promptOffsets + 2 - i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      int promptOffsets() = ( -2, -1, 0, 1, 2 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return len;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int i = recog->promptindex() % 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( int ten * 0; *s; **s )
     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ripbufp[ 0 ] = '\0';
stateBufp[ 0 ] = '\0';
cityBufp[ 0 ] = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog->peekPrompt( 1ip@ufP, LINE_SiZE, peekOffeet( 0 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog-speekPrompt( stateBufP, LINE_SIZE, perioffset[ 1 ] );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                else i . . i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( i == -1 && recog-vististening() )
PostMessege( h\nd, UM_COMMUND, MICROPHOME_BIM_ID, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   else if( lisspace( 's ) )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( isdigit( *6 ) )
  10
                                                                                                                                                             WIRAIN.COP 7-22-95 11:350
  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // -1 == EOF
20
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e> D )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // get the utterance handle; do not wait for the end of the
// utterance since the recognition can proceed in parallel
// with the utterance collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( recog->notifyCharnel( ch, SD_CHANNEL_START ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  assert( recog );
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SendDigitemMessage( hund, CHOICE_LISI_ID, LB_RESETCOMTENT, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             char buff LINE_SIZE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( 0 == ( digitlen 7 recog->contRecog(digitlen) : recog->recog() ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      const char* s = recog:>prompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int digitten = numbigits( s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if ( digitten )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SetWindowText( GetDigition( hund, CONFIDENCE_TEXT_ID ), but );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recog-settoc( digitatoc );
recog-settate( "digita" );
recog-seperateDigital digitlen );
                                                                                                                                                                                                                                                                                                                                            static boot backupDisabled a TRITE;
                                                                                                                                                                                                                                                                                                                                                                                               setup@rospt( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              itoa( recog->confidence(), buf, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( correct ** -1 )
recog->beep( "bad.way", SMD_locGLENIC );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char buff LINE_SIZE ), *b;
                                                                                                                                                                                                                                                                                                                                                                                                                                           recog. >nextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recog-vneatUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recog-setVoc( cityVoc );
recog-setState( (SD_STATE )0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for( int | = 0; | < recog->resultCount(); ++| )
                                                                                                                                                                            oto On Speech Exit;
                                                                                                                                                                                                                                                                                                     ( backupplisabled )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int correct . -1;
                                                                                                                                                                                                                               EnableWindow( GetOlgitem( hund, BACKUP_BIN_ID ), IRUE ); backupDisabled = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( letrcap( buf, recog->prompt() ) )
correct * i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SendDigiteemtessage( hund, CHOICE_LIST_ID, LB_ADDSTRING, O, (DNOM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recog->resultName( buf, sizeof( buf ), i );
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                                                                                                                                                Fage 4 of 8
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void DigNin::onDestroy( MMD )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           On_Speech_Exit:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 long FAR PASCAL_export DigMin::undProc( MAMD hand, UINT message, WPARAM wPeram, e> tPARAM (Param )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                word DigNin::anClase( NUND hund )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DestroyWindow( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( recog-*peekUtt() )
postSpeechEvent( ch, SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                messageMandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PostQuitMessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( speechlash )
                                                                                                                                                                                                                                                                                                                                                                          switch( mossage )
                                                                                                                                                                                                                                                                                                                                                                                                              long returnYelue = 0;
                                                                                                                                                                                                            default:
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     delete speechlask;
speechlask = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recog->beep( "ding.wav" );
                                                                                                                                                                                            messageHandled = FALSE;
                                                                                                                                                                                                                                                                                     handloHessage( LM_DISTROT, himd, LPeram, (Param, ontnitDistog);
handleHessage( LM_DISTROT, himd, LPeram, IPeram, ordestroy);
handleHessage( LM_DISTROT, himd, LPeram, ordes);
handleHessage( LM_DISTROT, himd, LPeram, (Peram, ordenmand);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1 recop )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog. >hillutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ii (chemet )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             delete recog;
recog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    delete channel;
channel = 0;
10
                                                                                                                VIRAIN.079 7-22-95 11:35a
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 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 static void makeTokHame( char* tokHame, char* usrHame, char* promptHame ) {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // Static Global variables of AppMin
MAND AppMin:hard;
MIASK AppMin:hiask;
bool AppMin:sessageHandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      class Appulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            public: static long FAR PASCAL _export undbroct HUMD, UTHT, WPARAM, LPARAM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static bod ordreated NAMD hand, CREATESTRUCT FAM* lpcreateStruct ); static void ordestroy( NAMD hand ); static void ordlose( MAMD hand ); static void ordlose( MAMD hand ); static void ordlose( MAMD hand, UINT cad, NAMD x, UINT y );
                                                                                                                                while( s > tokume )
                                                                                                                                                                        ρ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char* p = stpcpy( tokName, usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             static HUND hand;
static HIASK hlask;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Þ : 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return messageHandled 7 returnValue : 0;
                                                                                                                                                                                                                                               while( *0 && *E |* '.' )
                                                                                                                                                                                                                                                                                                                                                                                                                                for( cher* a = promptHame
s > promptHame;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( p > tokHame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           friend int PASCAL WinMain( HINSTANCE, HINSTANCE, LPSTR, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // undProc() services
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static bool messageHandled;
                                                                                                                                                                                                            .0. • d.
 30
                                                                                                                                                                                                                                                                                                                                                                        ill '1 == 1 | '1' == 4 | '1/' == 1')
                                                                                                                                                                                                                                                                                                                       breat.
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                strlen( promptHame );
                                                                                                             3 00 1
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yold DigWin::onCommand( NUMO hUnd, UINT cad, MUMO, UINT )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     strcpy( p, ".tok" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Case BACKUP_BTH_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        case EXII GIN ID:
    EndDialog("hMnd, 0 );
    break;
                                                                                                                                                                                                                                                                  if( recog == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       switch ( cad )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       case SAVEEXII BIW ID: if( recog.vgetUser() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     it( p : 8 > 7 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        case USR_COMBO_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        case CHOICE_LIST_ID: break;
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ill 's == '\\' || 's == s' || '\\' == s' || i
                                                                                                                                                                                                                                char usrName( LINE_SIZE ), promptHame( LINE_SIZE ), tokHame( LINE_SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      charmel -> flush();
recog. >saveUser();
                                                                                                                           if( !GetDigitemText( hisrd, USR_COMBO_10, usrName, LINE_SIZE ) )
    return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( maxBack == 0 ) maxBack = 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int maxBack = (recog->promptIndex() % 3);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( recog->getCharmel()->cardeckup( maxBack ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog.>notifyCharmel( 0, 8D_CHANNEL_BACKUP );
                                                                                                                                                                                                                                                                                                                                                                     eetupprompt( hiland );
                                                                                                                                                                                                                                                                                                                                                                                                recog. >nextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                   recog->nextUtt();
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                                                                                                             WIRAIN.COP 7-22-95 11:35a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; ** t*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *> Off" );
                                                                                                                                                                     break;
                                                                                                                                      COND PAUSE SLIDE ID:
30
                                                                                                                                                                                                                                                                 else
Rilllimer( hwnd, VUTINER_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SetWindowlext( GetDlgltcm( hWnd, WiCROPHONE BIN ID ), recog->isListening() ? "Wicrophone On" ; "Wicrophone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      digitsVoc = malDigitsVoc;
cityVoc = malCityVoc;
break;
case 'f':
case 'f':
                                                                                                                                                                                                                            setupPrompt( hland );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SetWindowleat( GetDigitem( hind, MICROPHONE_BIN_ID ), "Microphone Of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->listen( | recog->isListening() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              channel -> open( postSpeechEvent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recog->setUser( usrName );
recog->setVoc( digitsVoc );
recog->setVoc( cityVoc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              channel = new WindowsAdeptChannel( promptWame );
                                                                                                                                                                                                                                                                                                                                                                                                                           if( recog->isListening() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MCURSOR hCursor = SetCursor( LoadCursor( 0, IDC_MAIT ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  default:
return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recog = new Recognizer( charmet );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             makeTokName( tokName, usrName, promptName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    switch( usrName( strien( usrName ) · 1 ) )
                                                                                                                                                                                                                                                                                                                                                                            if( recog->prompt() == 0 )
recog->nextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                digitsVoc = femDigitsVoc;
cityVoc = femCityVoc;
break;
                                                                                                                                                                                                                                                                                                                    // initialize vs meter
Settimer( hWnd, VUTIMER_ID, 20, (IIMERPROC )0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return;
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::::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void Digwin::onlinerDrawVU( MARD hund, UINT ld )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 wordPause = GetScrollPos( GetOlgitem( hWnd, WORD_PAUSE_SLIDE_ID ), S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( id *= VUITHER_ID && charmei > islistening() )
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rc.tell
rc.right
rc.top
rc.bottom
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEP_S_STATUS tepinto;
                                                                                                                                             // draw speech
hBrush = CreateSolidBrush( 8GB( 0, 255, 0 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GetElientRect( hvu, &rc );
                                                                                                                                                                                                DeleteObject(hBrush);
                                                                                                                                                                                                                            SelectObject( hdc, hOldBrush );
                                                                                                                                                                                                                                                             Rectangle( hdc, rc.left, rc.tap, noiseright, rc.bottam );
                                                                                                                                                                                                                                                                                                                            // draw speech
MBRUSM hBrush = CreateSolidBrush( RCB( 255, 0, 0 ) );
                                                                                                                                                                                                                                                                                                                                                                          speechright = unit * fepinfo.speech_level * speechleft;
                                                                                                                                                                                                                                                                                                                                                                                                           noiseright = speechleft = unit * fepinfo.noise_level;
                                                                                                                                                                                                                                                                                                                                                                                                                                             unit * (rc.right · rc.left) / fepinfo.mex_level;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int moiseright, speechleft, speechright, unit;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MDC hoc = GetOC( hvu );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RECT rc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HUND how a GetOlgitem hand, WUNCTER_ID ):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fep_Status( (800L* )Atest, Afepinfo );
                                                                                                                                                                                                                                                                                             HBRUSH NOIGBrush = (HBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( wastistening )
recog->listen( ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( westistening )
recog->listen( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     by "I wastistening = recog-vististening();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        speechlask->setPar( "word-pausa", (short )wordPause );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33.
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                                                                                                           VIRAIN.079 7-22-95 11:350
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                                                                                                                                                                                ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int PASCAL WirMain( WIMSTANCE hinst, HIMSTANCE hirevinstance, LPSIR ipaccadine, exint /* ncadshow */ )
                                                                                                                                                                                                                                                                                                             RAND NUMB - CreateWindow( name, Name, Name, Name, US_OVER.APPEDWINDOW | WS_CLIPCHILDREW, CW_USEDEFAULT, CW_USEDEFAULT, CW_USEDEFAULT, CW_USEDEFAULT, CW_USEDEFAULT,
                                                                                                                                                                       Shouldindow( Applin::hand, SU_MIDE );
Shouldindow( hand, nCardshow );
Updatellindow( hand );
                                                                                                                                                 MSG ---g;
                                                                                                                                                                                                                                         essert( hand == Appain::hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ::hInstance = hInst; // the global hinstance for the sliderctl slideControl.tibMainInit(); // register the slider class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static const char name() = "OragCpp";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SetMessageOutue( 12 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( lhPrevinstance )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Background
Rectangle( hdc, speechright, rc.top , rc.right, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rectangle( hdc, speechieft, rc.top, speechright, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RegisterClass( &undclass );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ReleaseDC( hvu, hdc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DeleteObject( hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SelectObject( hdc, hOldBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hOldBrush = (MBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADCLASS undeless;
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                                                                                                                                                                                                                                                                         hinst,
(pszCardtine );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CS_HREDRAW | CS_VREDRAW;
Appwin::wmdProc;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ordicant 0, MAKEINTRESOURCE [ IDI_MY_ICOM ) );
                                                                                                      Page 7 of 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LoadCursor( 0, IDC_ARROW );
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```
yord Applin::onCommand( NUAD hund, UINT cad, NUAD, UINT )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bool AppWin::onCreate( NUMD hund, CREATESTRUCT FAR* )
(
                                                                                                                                                                                                                                                                                                                 void Applyin::onCtose( HUND hund )
                                                                                                                                                                                                                                                                                                                                                                                                   void Applin::orDestroy( NUMD )
                                                                                                                                                           long FAR PASCAL_export Applin::wndProc( MUND hund, UINT message, wPARAN wParam,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // create dialog box proc instances for use later
static FARPROC (pfn = MakeProcinatance( (FARPROC )Olgdin::uncProc, h
»> instance );
                                                                                                                                                                                                                                                                               Destroywindow( hund );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PostMessage( hund, UM_COMMAD, UM_INIT_DIALOG, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hund = hund;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hlask - GetCurrentTask();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return mg.weram;
                                                                                                                                                                                                                                                                                                                                                                 PostQuitMessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    case UM_INIT_DIALOG:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      switch ( cad )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            while( GetHessage( Lines, 0, 0, 0 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              default:
messageHandled • fALSE;
     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            break ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TranslateMessage( &msg );
DispatchMessage( &msg );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DialogBox( hinstance, "TestDialog", hund, (DLGPROC )[pin );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PostMessage( hund, UM_CLOSE, 0, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               essert( lpfn );
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                                                                                                                     VIRAIN.COP 7-22-95 11:35e
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return( messageHandled
? returnValue
: DefWindowProc( hUnd, message, wParam, (Param ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      long returnValue = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      messageHandled = IRUE;
                                                                                                                                                                                       ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              handleHessage (M. CREATE, hAnd, Warm, (Parm, onCreate );
handleHessage (M. CREATE, hAnd, warm, (Parm, contentry );
handleHessage (M. CLOE, hAnd, warm, (Parm, onCommand );
handleHessage (M. COMMAND, hAnd, warm, (Parm, onCommand );
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OCBase::OCBase( int initialsize, int incrementsize ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #11 DEBUG || UN11_1
                                                                                                                                                                                                             void OCBese::edd( void* e, int index )
(
                                                                                                                                                                                                                                                                       #endif
#if DEBUG || UNIT_3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wendit Bend | UNIT_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #include "ordcoll.h"
#include "defs.h"
#include <mem.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   yold OCBese::add( void* v )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( arrayUsed == arraySize-1 )
add( v, arrayUsed );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                *(array - 1) = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                array( 0 | = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       arraySize = ( initialsize <= 0 ) 7 6 : initialsize + 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Copyright (c) 1991-1995 by Oragon Systems, Inc.
                                                                                                                                                                                          assert( arrayUsed <= arraySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     errepused - 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     erray a new voidet erraySize + 1 ] + 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        incrementSize = ( incrementalize <= 0 ) ? arraySize : incrementsize;
                                                                                                                                                       assert( index <= arrayUsed ); // if( index > arrayUsed ) index=arrayUsed;
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ordcoll.cpp
base classes to manage ordered Collection. Like Array collection
but the items in the arrays follow an ordering principle set up by the
                                                                                                                                                                                                                                                                                                                                                                               array( arrayUsed +1 ) = array( arrayUsed );
array( arrayUsed++ ) = v;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
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                                                                                                               QEDCOLL.CPP 7-22-95 11:29e
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             #endit
#11 DEBUG || UNIT_5
                                                                                                                                                                                                                                                                                                                                                                                                                   yoid DCBase::removeEntry( int index )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               vold" OCBase::remove( void* e )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #endit
#if DEBUG || UMIT_6
                                                                                                                         else
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return ( i != .1 ) 7 removeEntry( i ) : 0;
                                                                                                                                                                                                                                                                                                                                                                                 assert( index >=0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int i . find( e );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      *(array *index) = e;
                                                                                                                                                                                  y't return rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..errayused;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( arrayUsed wa arraySize-1 ) (
                                                                                                                                                                                                                                                                                                                                              iff index < arrayused )
 30
                                                                                                                                                                                                                       errayUsed -= 1;
                                                                                                                                                                                                                                                                                                           void* rtn = array[ index );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          memmove( array +index +1, array +index,
  (arrayUsed -index +1)*sizeof( void* ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               erray = newleray +1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  delete [] (array -1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( newArray );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void ""neutrray = new void" [ arraySize +1 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( arraySize+1 < 0x4000 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            incrementSize +* (incrementSize>>2) + 48/(1 + (47/incrementSize) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   arraySize ** incrementSize;
                                                                                                                                                                                                                                                         acomove( array + index, array + index + 1, (arrayUsed - index) + sizeof( void* ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                memipy( neukrray, array-1, (index +1) * sizeof(void \binom{a}{i});
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#endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #endif
#if OEBUG || UNIT_7
                                                                                                                                                                                                                                                                                                                                                                                                                                                     int OCBase::findt const void* v, CompareOCEntries cmp,
int sortedlist ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int OCBase::/ind( const void* e ) const
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in i:
                                                                                                                                                                                                                                                                                                                                                         // returns -1 if it cannot find the entry
// it the compare function is given, it does a log2 search
// it position is given and the entry is not found, position util
// be the proper position this item should be added at;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( sortedList )
    return find( v, cmp, &i );
else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     assert( cap );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for( int i = 0; i < arrayUsed; ++i )
                                                                                                                                                                                                                                                                                 int testPositions0, lowindex=0, highindex=count() -1, cmp=-1;
                                                                                                                                                                                                                                                                                                                         essert( compare );
                                                                                                                                                                                          if( lastfound > highIndex | | lastfound < 0 )
lastfound = ( lowIndex + highIndex + 1 ) / 2;</pre>
                                                                                                                                                                                                                                                  static int lastfound = -1;
                                                                                                                                                          while( lowIndex <= highIndex )
      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ii( array(i) == e ) return i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for( i = 0; i < arrayUsed; ++i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( tcmp( v. array(i) ) ) return i;
  10
                                                                                                                OBDOOLL.07P 7-22-95 11:294
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                                                                                                                                                                                                                                                                                                                                                                             Fend I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void OCBase::append( OCBase *given )
                                                                                                                                                                                                                                                                                                                                                                                                                                   arrayUsed +* givenUsed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return (cmp == 0) ? testPosition : -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mencpy( array *arrayUsed, given-*array, (givenUsed *1) * sizeof(void *) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pssert( newSize < 0x4000 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unsigned giverUsed = given->count();
unsigned newSize = (errayUsed + givenUsed +5) & Oxfffc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       masert( given );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( position ) *position * testPosition + (cap > 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( arraySize < newSize )
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          arraySize · neuSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              array = newarray +1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  delete () (array -1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void **newkrray = new void*( newSize + 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                else // cap < 0
highlndex = testPosition - 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            else if( cmp > 0 )
lowlndex = testPosition + 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cap = compare( e, (*this)( testPosition ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  momcpy( newArray, array-1, (arrayUsed +1) * sizeof(void *) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             testPosition = lastFound;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lastFound = ( towIndex + highIndex ) / 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( cmp == 0 ) break;
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                                                                                                    Page 2 of 2
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```

```
void DlintBase::remove() (
// removes this from tinked list
if( nextlink )
restlink -prevlink = prevlink;
if( prevlink -prevlink)
if( prevlink -prestlink=nextlink;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           finclude "deq.h"
finclude studef.hv
finclude sassert.hv
                                                                                                                                                                                                                                                                                                                                                  void DegBase::addFirst( DtinkBase* list ) (
    // inserts this BELOW the newItem;
    its:>setPrev( DtinkBase*) 0);
    its:>setMaxt(f);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void DLinkBase::addPrev( DLinkBase* newItem ) {
   // this is in the list, newItem is inserted at this's prev
   assert( newItem i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void OLinkBase::addRext( OLinkBase* newItem ) {
   // this is in the list, newItem is inserted at this's next
   assert( newItem i= 0 );
                                                                                                                                                            void DegBase::addLast( DLinkBase* list ) (
    // inserts this BELOW the last()
    list-vastMext( (DLinkBase*) 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                felist;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prevtink = newitem;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           newitem->previous = this;
newtlink = newitem;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( (newitem->nextLink=nextLink) (= 0 )
nextLink->prevLink=newitem;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nextLink = previous = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( (newitom->prevLink=prevLink) 1= 0 )
prevLink->nextLink=newitom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Copyright (c) 1991-1995 by Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEO.cpp
base classes to manage doubly linked queue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                  f->eelPrev(list);
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                                                                                                                                     DE0.CPP 7-22-95 11:35m
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DeqBase *DeqBase::bisect( DLinkBase* cutoff ) (
// this->last() i= cutoff, the returned Deq's first()=cutoff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void DepBase::remove( OlinkBase* list ) (
// removes list from DepBase updating first and last;
if( ist->prev() )
   (ist->prev();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void DecBase::addWext( OLinkBase* list, DLinkBase* newltom ) {
   if( list==| )
   addLast( newltom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #if DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void DegBase::addPrev( OLinkBase* list, OLinkBase* newItem ) (
    if( list=uf )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  else
falist;
                                                                                                                                                                                                                                                                                   * o;
                                                                                                                                                                                                                                                                                                                                                      ( * cutoff->prev();
if( | )
                                                                                                                                                                                                                                                                                                                                                                                                              newDeq->1 = cutoff;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DeqBase* newDeq * new DeqBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( OLinkBase* p = f; p != 0; p = p > next() )
if( p == cutoff ) break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( list->next() )
    list->next(ink->prevtink = list->prev();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (=1 ist;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      list->setPrev(1);
                                                                                                                                                                                                                                      if( cutoff )
cutoff->setPrev( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           assert( cutoff (= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              list->previous a list->nextlink = 0;
                                                                                                                                                                                                return neweq;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            actert( p == cutoff );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   i->setHeat(list);
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          addfirst( newitem );
                                                                                                                                                                                                                                                                                                                                   ( · >metHent( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ( * list->prev();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               f=list->mext();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   list-raddPrev( newltom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (ist->addlext( newlton );
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```

```
bool DegBase::sorted( Dt/intCompare compare ) {
    Dt/intBase *fist=f;
    assert(fist i= 0);
                                                                                                                                                                                                                    long DegBase::count() const (
long is0;
for (Din#Base *!ist*f; (ist; (ist*list*>next()) **i;
return i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        list-raddlest(ins );
insertiorDome:
inserut;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void DegBase::sort( DlinkCompare compare ) (
    // a straight insertion sort
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void DegBase::merge( DegBase* endDeq ) (
// connects the end Deq to the bottom of this
assert(endDeq: / f = 0);
                                                                                                                                                                                                                                                                                                         #if OEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               while (ins I= 0) (
nutsins->next();
remove( ins );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   assert((j=count()) != 0);
#endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         while (tist->prev() i= 0) (ist=list->prev();
f=list;
                                                                                                                                                                                                                                                                                                                                                                      assert(j==count());
assert(sorted(compare));
                                                                                                                                                                                                                                                                                                                                                                                                                        while (rut->next() i= 0) l=nxt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mt-list;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ins=list->next();
remove(list);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      endDeq->romoveAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Deg. of - oprevious . !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            white( compare( ins, tist ) > 0) (
if( tist->next() == 0 ) break;
else tist=list->next();
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             white( compare( ins. list ) < 0) (
if( list-*pert() == 0 ) (
ins-*pert(ink = list;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIT DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clar embeg of;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             elan list=list->prev();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            goto insertiorDone;
 10
                                                                                                               DE0.07 7-22-95 11:35e
                                                                                                                                                                                                                                                                                                                                                                                                                                       rut=rut->next();
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             list-sprevLink = ins;
20
25
                                                                                                                                                                                                                                                                                                                                                                                                                        Bendi f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void DegBase::removeAll()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bool DegBase::validateDeq()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DlinkBase *d, *neutlink;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for( DLinkBase* d * f; d t* 0; d * d->nextLink )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( f == 0 ) return( 1 == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for( d = f; d )= 0; d = nextlink )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( d = 1; d 1= 0; d = d->prevtint )
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d->setNext( 0 );
d->setPrev( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              next(ink = d->next();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( d == d->prevtink ) return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( d->previous == 0 & f i= d ) return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( DlinkBase *p = d->prevlink; p i= 0; p = p->prevlink )
   if( d == p ) return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( d == d->nextLink ) return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35
                                                                                                           700 2 of 2
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```

```
sinclude "std.h"
sinclude «stdi.h»
sinclude «stdilb.h»
sinclude «string.h»
sinclude «ctype.h»
sinclude «assert.h»
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OveShotkeap StateZip::osNeap( 30 * 1024 );
StateToStateZipMS StateZip::stateToStateZipMS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Addine errorExit( a ) ( printf( a ); exit( 1 ); )
Addine LINE_SIZE 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 finclude "hashcaz.h"
                                                                                                                                                                                                                                                                                        // hash the name
unsigned CityToZipHS::keyHash( const StinkBase* slb ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Compare city names and return difference between rips
int CityToZipMS::compare( const StinkBase* sib1, const StinkBase* sib2 ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copyright (c) 1991-1995 by Dragon Systems,
                                                                                                                                                                                                                                                                                                                                                                               return rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Compare city names
int rin = stroug( ((CitySL= )s(b1)->name, ((CitySL= )s(b2)->name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        essert( slb1 );
                                                                                                                                                                                                       return stringHash( & );
                                                                                                                                                                                                                                               char *s = ( (CitySt* ) sib ) -> name;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 I( rin == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                               else
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else iff ( (CitySL* )slb! )->zip < ( (CitySL* )slb2 )->zip )
return -1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( ( (city5t* jelb1 )->zip > ( (city5t* )elb2 )->zip )
  return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
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                                                                                                                                 MASICSZ.CPP 7-22-95 10:234
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Wash name
unsigned StateloStateZipHS::keyHash( const StinkBase* sib ) const
(
                                                                                                                                                                                                                               // Array that defines the range of zips legal for each state
stateZip usastates!) =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // compare zips and return difference between city names int ZipToCityHS::compare( const SlinkBase* sib1, const SlinkBase* sib2 ) const (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // hash the zip
unsigned ZipToCityHS::keyHash( const SLinkBase* sib ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          StateZip::StateZipt const char* ma, const char* 12, const char* eZip, const char* eZip, const char* eZip,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int StateToStateZipMS::compare( const SlinkBase* s1b1, const SlinkBase* s1b2 ) c => onst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return stroup( ((StateToStateZipSt* )elb1)->name, ((StateToStateZipSt* )elb2 => )->name );
                                                                                                                                                                                                                                                                                                                                   stertZip = atol( sZip );
endZip = atol( eZip );
upalD = atol( id );
pure( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return ((CitySL* )slb)->zip;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       else if( rtn > 0 )
return 1;
                                                                                                                                                         ${\text{lpt "airsort", "A$", "00100", "00299", "00" },// UP$ airsort pseudo 
$tate2!pt "canada" "CM", "00300", "00599", "00" ), // UP$ Canada pseudo 
$tate2!pt "puertorico", "PR", "00600", "009999", "00" ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return stringHash( s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            const char *s = ((StateToState2ipSL* )slb)->name;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( rtn == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 long rtn = ( (CitySL* )slb1 ).>zip . ( (CitySL* )slb2 ).>zip;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return stromp( ((CitySL* )slb1)->name, ((CitySL* )slb2)->name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( ((CitySt* )sib1)->name == 0 || ((CitySt* )sib2)->name == 0 )
return 0;
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return :1;
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```

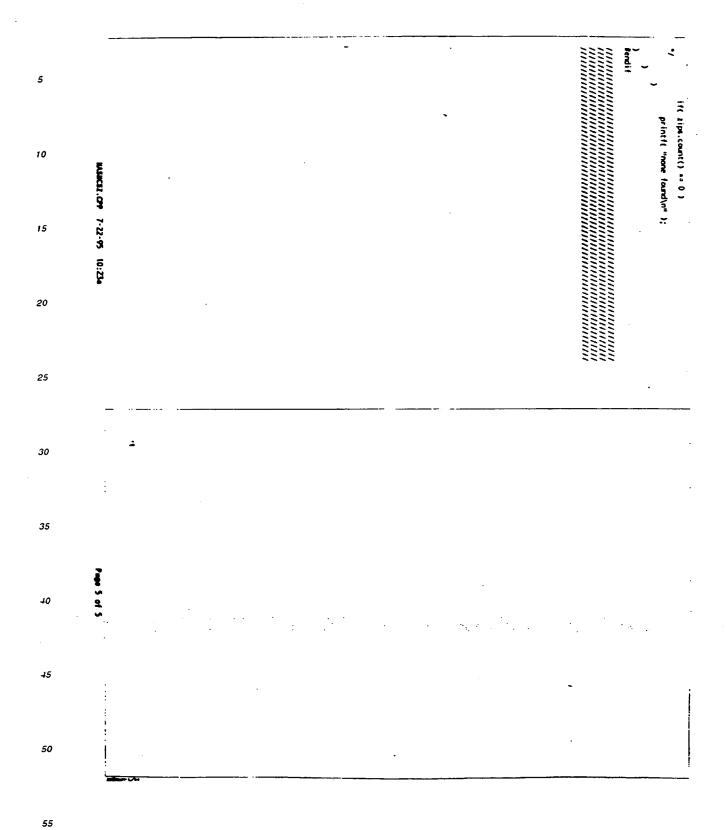
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unsigned char StateZip::zipIdJsaStateZipl 1000 ];
unsigned short* StateZip::firstDigitBitField;
unsigned short* StateZip::firstDigitPairBitField;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // initialize StateZip
void StateZip::initZipIoUseStateZip()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #define NUMSTATE21PS ( sizeof( useStates )/sizeof( State2ip ) )
                                                                                                                                                                                                                                                                             // find state for a certain zip state2ipt tong zip )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     firstDipltPairBitField[ i=7 + ((zip/1000)>>4) ] |= 0x0001 << ((zip/1=> 000) & 0x0f);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     firstDigitPairBitfield = new unaigned short( MAMSTATEZIPS * 7 );
memset( firstDigitPairBitField, 0, MAMSTATEZIPS * 7 * sizeof( short ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           firstDigitBitField = new unsigned thort( MUSTATE2IPS );
scenet( firstDigitBitField, 0, MUSTATE2IPS * sizeof( short ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( zipIoUsaStateZip[ 0 ] != 0 )
  return;
                                                                                                                                                                                                                               return &usaStates[ ziploUsaStateZipl zip/100 ] ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in0; (authstatezips; ++1 )
  30
                                                                                                                                                                                                                                                                                                                                                                                                 atateToStateZipHS.add( new( BosHeap ) StateToStateZipSt( i, usaStates( i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // NIMSTATEZIPS rumber of states in usaState array
int i = 0; i < NUMSTATEZIPS; ++i )</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // digit of a zip is legal for that state or zip -= zipx100; zip -= sz.endzip; zip -= 100 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // for each state define a bit code that defines whether the first or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for each state there is a hashed array on the state name of with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( zip == 800 LL *(sz.statokame()) == 'p' )
continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           firstDigitBitField[ i ] | 0x0001 << \zip/10000);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ziplodseStateZipl zip/100 ] . i;
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                                                                                                                                                                 740 2 of 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // puertorico
          50
```

```
// find zips for a certain state name
StateZip* StateZip::findStateZip( char* stateName )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // find marching zipe, state and cities, given a zip choice list and city
// choice list
void StateZip::zipToStateCities( ZipHypothesis* zHypo, AC< CityHypothesis > *cit
** yHypo )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   StateloState2ipSL* State2ip::findState2oftate2iptl( char* stateName )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bool StateZip::arefiratThreeDigitaLegal( int dgt1, int dgt2, int dgt3, int state
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bool StateZip::arefirstIwoDigitsLegal( int dgt1, int dgt2, int stateId )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bool StateZip::isFirstDigitLegal( int dgt1, int stateId )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return state1d -= ziploJeaStateZipt dgt1 * 100 + dgt2 * 10 + dgt3 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return 0 i= (firetDigitBitField] eteteld ] & (0x0001 << dgt1));
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( ind )
return &useStates[ ind->useIndex ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                StateToStateZipSt *frd = stateToStateZipMS.find( &tmp );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bool zipAgraes = !strcmp( sz->name, zNypo->stateMame() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 StateZip* sz . StateZip::findStateZipf zip );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return 0 1= ( firstDigitPairBitField[ stateIdm7 + (Index>>4) ] & (0x0001 << (Index & 0x00)) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int index = dgt1 * 10 + dgt2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return stateloStateLipHS.find( &tup );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StateloStateZipSt tap( 0, stateMame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                StateToStateZipSL tmp( 0, stateHame );
                                                                                                                                                                                                                                                                                                                                                                                              for( CitySt* cal * az->z2c.find( &teat ); cal; cal * cst->next() )
//
                                                                                                                                                                                                                                                                                                                                                                                                                                                CitySt test( zip, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            long tip = zHypo->velue();
  5
                                                                                                                                                                                                                                                                                                                                                               il( zip == cal->zip )
                                                                                                                                                                                     CityHypothesis* ch = &( (*cityHypo) | cityHypo->makeRoom( 1 ) ) );
                                                                                                                                                                                                                                                                                                                    for( int i*cityHypo-*count(); i--;
                                                                                                                                                                                                                                                     (f( istromp( csi->name, (*cityHypo)( i ).cityHame ) )
goto endOffind;
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                                                                                                                                          MASHESZ.CPP 7-22-95 10:234
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               endOff ind:
                                                                                                                                                                                                   // In(tiatize hach tables int StateZip::initHSe( char* filename )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // parse lines of address list file
static bool parseline( char* line, long* z, char** stateMame, char** cityMame )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Get zips for cities
char* StateZip::cityToZips( char* city, AC< long > *zips }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                char* rtn=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CitySt test( WILDZIP, city );
                                                                                                                                                             sasert( filename );
                                                                                                                                                                                                                                                                                                   return TBUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return fALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 while( *s && lisspace( *s ) ) **s;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ... cetatella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( *e sm '\0' || a se (ine )
return FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         willet "a & isdigitt "s ) ) ++s;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cher "s . line;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( CitySL* csl * c2z.find( Atest ); csl; csl = csl->nest() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for( "cityHame - s; "s; ++s )
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( latrcmp( city, cst->name ) )
                                                                                                                                                                                                                                                                                                                                                                                      break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ch->zh = zWypo;
ch->cityMame = cst->name;
ch->zipMgreesWithState = zipMgrees;
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                                                                                                                                        7-qu 3 of 5
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5 ()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             StateZip *sz = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             char line( LINE_SIZE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( datafile == 0 )
return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE "dataFile = fopent filename, "r" );
                                                                                                                                          return sz ? sz->c2z.count() : 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             while (fgets) line, sizeof( line ), datafile ) is 0 )
                                                                                                                                                                          fclose( datafile );
                                                                                                                                                                                                           élse
bresk;
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   char "cityHame, "stateHame;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int readSize = strlen( line );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( perseline( line, &rip, &statemen, &cityHeme ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 essert( readSize < sizeof( time ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( readSize < 5 ) continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fort CitySt *calesz->c2z.firstCollision( &test ); csl; csl=csl->next
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CitySt test( zip, cityHame );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chare cty = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( ss == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                    17( cal -- 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      se = findStatelip( tip );
                                                                                                                                                                                                                                                                                      sz->c2z.add( new( &osNeap ) CitySL( zip, cty ) );
sz->z2c.add( new( &osNeap ) CitySL( zip, cty ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          iff introspt cal-sname, citystame ) )
                                                                                                                                                                                                                                                                                                                                                                                                                  if cly == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cty . csi . name;
                                                                                                                                                                                                                                                                                                                                                  stropy( cty, citystame );
                                                                                                                                                                                                                                                                                                                                                                                  cty - new( BosNeap ) cher[ strien( cityleme ) +1 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( zip == cal->zip )
break;
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                                                                                                        MASHCSZ.CPP 7-22-95 10:23a
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                                                                                                                                                                                                                                                                                                                                                       `•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #if 0

// Test main for this module

yold main( int, char** )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  usaStates[ 7 ].initHSs( "../wcpt/zip/zip.06" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  usaStates( 6 ].initMSs( "../wcpp/zip/zip.05" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  State2ip::init2ipToUsaState2ip();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OC< cher > cityHypo;
AC< long > zips;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cher buff LINE_SIZE 1;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( i )
buf( i-1 ) * '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (f( *s == 'q' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int i * strlent but );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fgets( buf, LINE_SIZE, sidin );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       itt fedigitt *6 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        char "s = buf;
                                                                                                                                        print( "zip is %ld\n", zipa[ --i ] );
                                                                                                                                                                                        StateZip* az = cal->cityloZips( s, &zipa );
                                                                                                                                                                                                                                                                                                                                                  mile( *. 1- · · )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( int i-cityHypo.count(); i; )
printf( "city is %a\n", cityHypo[ --i ] );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cher *state;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cityHypo.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Statelip" st = Statelip::findStatelip( rip );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              long tip = stal( s );
                                                                                                                                                                                                                        zipa.removeAll();
                                                                                                                                                                                                                                                        white( *, ** '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sz->zipToStateCities( zip, &state, &cityMypo );
                                                                                                                                                                                                                                                                                                                                                                                                                    if( cityHypo.count() ** 0 )
printf( "none found\n" );
                                                                                                                                                                                                                                                                                                        if( ** ** '\0' )
 35
                                                                                                     7 to 1 s
   40
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```



```
// Compute the memory consumption by walking the global heap.
// Count every non-discardable block which belongs to our EXE or Dits.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              finclude stoolhelp.h>
finclude string.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         const char *moduleList[] =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              long computeMemoryUse()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // loop through the global heap
GLOBALENSEY gEntry;
gEntry.duGize = elzeof( GLOBALENSEY );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // toad global information GLOBALINFO globe; globe.dw51ze = e1zedf( GLOBALINFO );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Author: Greg Gadbois
Created: 1991 -1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glabelinfo( Aginfo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copyright (c) 1991-1995 by Bragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MODULEENIRY MEntry;
MEntry. Outlize - sizeof( MODULEENIRY );
                                                                                                                                                                                                                                                                                                                                                                                                                 for( 800L bHasEntry * GlobelFiret( &gEntry, GLOSAL_ALL );
bHasEntry;
bHasEntry * GlobelMaxt( &gEntry, GLOSAL_ALL ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tong totalMemory = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   laskEntry.deSize = sizeof( TASKENTRY );
    5
                                                                                                                                                                                                                                                                                                                                                              // ignore free blocks if( igEntry.howner )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              memuse.cpp
Module taht computes memory usage during the operation of the applicatio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                      // ignore the following types of data blocks suitch( gEntry.wiype )
                                                                                                                                                                                        case GT_CODE:
case GT_FREE:
case GT_SENTINEL:
case GT_SUNGERNASTER:
  10
                                                                                                                                             NEMUSE. CPP 7-22-95 10:26a
                                                                                                                                                                                                                                                                                                                                                                continue;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . ( MOLIVAY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return totalHemory;
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for( const cher** module = moduletist; *module; **module )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( 0 ** ModuleFindHandle( RoEntry, (MMCDULE )gEntry.hOwner ) }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( laskFindHandle( &taskEntry, (WIASK )gEntry.hOumer ) )
strcpy( wEntry.szModule, taskEntry.szModule );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( 0 ** stricap( *module, mEntry.saModule ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( *module == moduletist( 0 ) )
MessageBox( 0, "in Memory", "found UAPP", MB_OX | MB_ICOMBXC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      totalNemory += gEntry.duBlockSize;
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                                                                                                                                       -
of
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      45
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```

```
Binclude <assert.h>
Binclude <stdlib.h>
Binclude <atring.h>
Binclude <atring.h>
Binclude "defs.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /* Copyright (c) 1995 by Dragon Systems, Inc.*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               class ACBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hitndet errcoll_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /* ARRICOLL .M */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedef int ("CompareACEntries)( comst vold" given, const void" test);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>...</u>
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // destructor ACBmse();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // constructors
ACBase( size_t entrysite, unsigned initialsize * 5, unsigned incrementsize *
> 5 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int add( const char& item, int index=-1 );
// index == -1 is a wildcard for end of file
// returns a proper index or -1 on failure
                                                                                                                                                                                                                                                                                                    int findt const char& v ) const;
int findt const char& v, CompareRCEntries cmp, int sortedtist=0 ) const;
int findt const char& v, CompareRCEntries cmp, int* position ) const;
if the const char& v, CompareRCEntries cmp, int* position ) const;
if any a cmp function is given it is assumed it is an unsorted
// itst... we do a stupid absative search
// it the compare function is given, and sortedList is IRUE we do
// a log2 search
// if a position is given we do a log2 search and
// if position is given and the entry is not found, position will
// be the proper position this item should be added at;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void removeC char& v );
void removeEntry( unsigned i );
void removeAl(();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int makeRooms int numloadds1, int index=:1 );
// elicestes a block of elements starting at index
// (-1 is a wildcard meaning at the red the array)
// returns the index of the first item or :1 on failure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chark operator()( const int i ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void next char p );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int increment() const; int increment( int i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int count() const;
bool isEmpty() const;
                                                                                                                                                                                                                                                               indexOff const chard v ) const;
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // does not call element destructors
                                                                                                                                                                                                        MERCAL . 1 7-22-95 2:12p
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unsigned erraySize;
unsigned erraySize;
unsigned entrySize;
unsigned incrementSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inline void ACBase::lastEntry() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inline ACBase: 'ACBase()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline int ACBase::count() const
                                                                                                                                                                                                                                                                                                                                                                                                               inline vold* ACBase::next( char* p )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline void* ACBase::last()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inline void ACBase:: first()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intine int ACOase::increment( int )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inline int ACBase::increment() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intine boot ACBase::isEmpty() const
                                                                                                                                                                                                                                                                    inline void* ACBese::prev( char* p )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return arraydsed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return array + (arrayUsed -1) * entrySize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              char* array;
void* (astEntry() const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void sort( CompareACEntries cmp );
void merget ACBase* given );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int rtn * incrementSize;
incrementSize * i;
return rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return incrementSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return( count() == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    delete () array;
                                                                                                                                                                                                                                                                                                                                      assert( p = asserty() ? p = entrySize : 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return( errayUsed > 0.7 lastEntry() : 0.);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return( array0sed > 0 7 array : 0 );
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## EP 0 762 385 A2

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## Operator[]( int i ) const ( return (18 ) ((T*)array)( i ]; )
// const ?* operator[]( int i ) const ( return (const !* ) Actase::operator[]
=> (i); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            template «class I»
class AC : public ACBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inline void ACBase::sort( CompareACEntries compare )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inline char& ACBase::operator()( const int i ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inline void ACBese::remove( char& c )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inline void ACBase::removeAtt()
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void add( const the, int index=-1 ) ( ACBase::add( (const chark )e, index ) => ; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qsort( (void*) array, arrayUsed, entrySize, compare );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               arrayUsed = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      removeEntry( find( e ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            essert( prolastEntry() );
return( p > array ? prentrySize : 0 );
                                                                                                                                                                                                                                                                                                                                            int findt const I& e ) const ( return ACBase::findt (const char4 ) e); )
int findt const I& e CompareACEntries cmp, int sortedList=0 ) const (
    return ACBase::find( (const char4 ) e, cmp, sortedList );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1º first() ( return (I° ) ACBase::first(); )
1º (ast() ( return (I° ) ACBase::last(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( (unsigned )i * (unsigned )count());
return* ( array * i*entrySize );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. USH( 1. 6 )
                                                                                                                                                                                                                                                                            int find( const T& e, CompareACEntries cmp, into position ) const (
return ACEase::find( (const char& ) e, cmp, position );
                                                                                                                                                                                                                                                                                                                                                                                                                                  void remove( const I& e ) ( ACBase::remove( (char& )e ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              prev( I* e )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     assert( e >= (1º )array );
return( e+1 < ((1º )array) +arrayUsed 7 e+1 : 0 );</pre>
                                                                                                                                                                                                                   return ACBase::indexOf( (const char& ) e ):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( e < ((1º )array) + arrayUsed );
return( e > (1º )array ? e-1 : 0 );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #endit // arrcoll_h
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void merge( AC<1>* given );
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Bitndet dea h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Adefine TRUE
Adefine FALSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dinkbase *prevlink, *neattink;
protested:
pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               template *class ?>
class Olink ; public OlinkBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            public:
OlinkBase() ( previous = mextLink = 0; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     class DLinkBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /* DEO.H

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               typedef int bool;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         typedef int (*OlinkCompare)( OlinkBase*, OlinkBase* );
// compare(Olink *m, Olink *b) *** (a - b)
                                                                                                                                                                                                                                                                                                                                               /// Deg Template
                                                                                                                                                                                                                                                                                                                                                                                                   void addrext( DlinkBase* );
void addrev( DlinkBase* );
void remove();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 *prev() const ( return (1*) DlinkBase::prev(); )
1 *next() const ( return (1*) DlinkBase::next(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OtinkBase *previ) const ( return previnh; )
DtinkBase *next() const ( return nextLink; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void addiest( 7* ||st ) ( DLinkBase::addRest( (OLinkBase*) list );
void addPrev( 1* ||st ) ( OLinkBase::addPrev( (OLinkBase*) list );
// void remove() ( DLinkBase::remove(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            friend class DegBase;
friend class MDBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void setPrev( 1º (ist ) ( DLinkBase::setPrev( (DLinkBase*) list );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0-
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protected:
DLinkBase of,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            template «class ?»
class Deq : public DeqBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bool containst DirishBase* );
bool sorted DirishCompare );
long count() const;
DegBase() ( removeAll(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void addfirst(DlinkBase*);
void addfest(DlinkBase*);
void addfest(DlinkBase*)ist, DlinkBase* newitem
void addfest(DlinkBase* list, DlinkBase* newitem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // DlinkBase manipulation routines
DlinkBase first() const ( return f; )
DlinkBase last() const ( return l; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #if DEBUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DeqBase() ( f=l=0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Dtinkbase manipulation routines
1º first() const ( return (1º) DegBase::first(); )
1º (ast() const ( return (1º) DegBase::(ast(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void merge( DegBase* nextDeq
// cornects the given Deq to
// nextDeq->removaAll()'d at
void sort( DLinkCompare );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Deg manipulation routines
DegBase "bisect( DtinkBase" (
// this->last() != cutoff_ti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bool isEmpty() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      woid removeAil() ( f=1=0; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void remove( OlinkBase* (ist );
                                                                                                                                                                                                                                                                                                                                                                                                               // Deq manipulation routines
Dearty biset( ! cutoff ) ( return (Dearty )Deapss::biset( (DtinkBase))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void remove( I* list ) ( DeqBase::remove( (DlinkBase*) list );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30
                                                                                                                                                                                                                                                                                                                        marge( DeqxT>" nextDeq ) ( DeqBase::marge( (DeqBase") nextDeq ); )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the returned Deg's first()=cutoff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ( return ( f == 0 ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cutoff );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the end of this the end of merge
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## EP 0 762 385 A2

5				// connects the given D // nextDeg-oremoveAil() // nextDeg-oremoveAil() // of OFBNG bool contains( f* list /* deq_h */ // deq_h */
15	DEG.M 7-22-95 2:12p			// connects the given Deq to the end of this // nextDeq-removeAll()'d at the end of merge #if DEBUG bool contains( [* list ) { return DeqBase::contains( (DLinkBase*) list ); ) if /* deq_h */
20				s( (DlinkBase⁴) (ist ); }
30			· ·	
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+0	2			
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```
// data structures
/* parameter setting struct */
struct Commbars
                                                                                                                                                                                                                                                                                                                         // dialogs
#define limen_EVENT
#define limen_interval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // COMM Window Messages
ddefine LM_COMM_CNECK_MSG
#define LM_COMM_SEND_STMC_MSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #include swindowsk.h>
#include satring.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #ifndef DEAMONH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Revisions (latest first):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Author: Hal Strausberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Briefine HCOM MANDLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           //------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /* misc. constants */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // comm defines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyright (C) 1994 Dragon Systems,
                                                                                                                                         word port;
int baud;
cher perity;
cher detables;
char stopbits;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PURPOSE: include file for communciations module.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SINCTIONS:
 5
                                                                                                                                                                                                    `.
                                                                                                                                                                                                   port number (1·n) */
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                                                                                                                                                                                                                                                                                                                                                                                    DEMICII. II 7-22-95 2:08p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Written:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         March
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28,
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 25
                                                                                                                                                                                                                                                                                                                                                           class Comm : public CommPrimitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          class Comm;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        struct Commercialitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               struct CommGlobals
                                                                                                                                                                           // the needed CallBack... export conflinerProc( NUMD hard, UNI mag, UNI processor to NUMB dalline );
sjette void CALLBACK_export conflinerProc( NUMB hard, UNI mag, UNI sjette void CALLBACK_export conflinerProc( NUMB hard, UNI mag, UNI sjette void CALLBACK_export conflinerProc( NUMB hard, UNI mag, UNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int err;
wood wilmerid;
(comport params;
Comport oldparams;
BYTE urbuffer()MBUFSIZE);
BYTE ubuffer()MBUFSIZE);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int breaklen;
unsigned
inusigned
outs:
cts:
dsr:
dsr:
fts:

                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Comprinitive()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CommPers( int pt, int bd, int pr,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CommPars()( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unused: 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int connected;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     port s pt;
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       breaklen = 300; inx = FALSE;
cts = FALSE; dsr = FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                     connected = NFG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                acommet( (LPVOID )this, (BYIE )O, (WORD )sizeof( CommPrimitive ) );
                                                                                                                                                         CALLBACK _export conditinerProct NUMB hand, UINI mag,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ' input xon/xoff */
' output xon/xoff */
' output xon/xoff */
' cts flow ctrl */
' dtr flow ctrl */
' rts flow ctrl */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 baud = bd;
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /* settable parameters */
/* saved copy for temporary changes */
/* received block buffer */
/* received block buffer */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /* ID for an open connection */
/* code from last erroneous operation */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int dt, int st )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dtr = FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              parity = pr;
        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CIR - FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 detablite - dt;
                                                                                                                                                                                      , UINT eng, UINT idlime
        45
                                                                                                                                                         UNI idii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stopbits
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Bendi i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMB Numd;
800L meditelync;
800L outGoing;
int curticher;
int index;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static void CALLBACK _export comflinerProc( MMD hund, UINI mag, UINI idline \mathbf{s}, DUGND duline \mathbf{j};
                                                                                                                                                                                                                                                                                                                                                                                                       // functions to take over...
BOOL checkMessage();
BOOL sendSyncMeg();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          800L comConnect();
800L comDisconnect();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Comm( NUMBO, CommPars* =0 );
'Comm();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  void comGetQueueCounte( LPINT lpRxq, LPINT lpTxq );
void comf(ushQueues();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int error() ( return err; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int comDoDutput( LPSIR lpStr, int (en );
int comCheckOutputStatus();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void comfetWindowsParams( CommPars* lpPrms, DCB far *lpDCB );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int combrite();
int combrite( LPSIR ipStr, int len );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int comfead();
int comfead();
int comfead() (PSIR s, int max ) ( return ReadComm( cornectid, s, dax ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BOOL comReset();
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void comSendBreak( int ten );
800t comCtearLine( DNDRD dwGuiet, DNDRD dwHax );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // protected service functions:
void timerProcPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  static CommPars defaultPars;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // protected data:
Comm** global;
 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Index into the arbuiler for putting new characters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // the hand that processes comm events
                                                                                                                                                      DEAMON.N 7-22-95 2:00p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // hand that processes Complessages
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Binctude "ordcoll.h"
Binctude "arrcoll.h"
Binctude "oneshot.h"
Binctude "stack.h"
Binctude "dragopp.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // riphypothesis also contains 50 MORO handle for the recognized word // rihypothesis inherits from ZipResult class ZipHypothesis : public ZipResult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                struct 2ipResult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // public class that contains phrase, spelling, index to the rip // starting from beginning of phrase, and an index for the spelling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      class CityHypothesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bilmdel hashesz_h
Edeline hashesz_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               public;
bool istendord;
so_word word!d;
                                                                                                                                                                                                                      // Array of ZipHypotheses
class ZipHypoAC : public AC< ZipHypothesis >
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MASHCSZ.H "/
Copyright (c) 1995 by Oragon Systems, Inc."/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char phrase( UTI PROMPT LENGTH );
// same as phrase, but digits have NO spaces
char spelling( UTI_PROMPT_LENGTH );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // returns pointer to zip code and following state name
char* zipStateWame() { return spelling * zipStateSpellingIndex; }
char* stateWame() { return spelling * stateSpellingIndex; }
                                                                                                                                                                                                                                                                                                                                 ZipHypothesis( ZipHypothesis );
ZipHypothesis( Recognizer*, ZipHesuit );
ZipHypothesis( Recognizer*, lorg, ZipHesuit );
ZipHypothesis() ( );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int initiromphrase();
int initiromspelling();
tong value() ( return stol( zipStsteName() ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2ipResult() ();
2ipResult( 2ipResult& );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               short zipStateSpellingIndex;
short stateSpellingIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CityHypothesis* ch;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // returned by recognizer, example: phrase "blue 0 1 9 1 3 massachusetts
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                                                                                                                                                                                MASHC 52.81 7-22-95 2:12p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Heavy duty function that filts up liphypoAC with rip alternatives // Each alternative has a 50 w080 handle extern int buildhypothesist Recognizer*, 2iphypoAC*, liphesuits, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        public:
    ZipHypoAC( unsigned initialsize * 5, unsigned incrementaize * 5 )
    : AC< ZipHypothesis *( initialsize, incrementaize ) ( )</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              class Mypothesis
                                                                                                                                                                                                                                           // public class that knows all relevant info about a recognized city name
// analogous to ZipHypothesis
struct CityHypothesis
                                                                                                                                                                                                                                                                                                                                         class StateZip;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Natrix that contains log values for degree of confusability
// between each digit pair
static int confusionScoret 100 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Generate a new hypothesis by taking the top from the stack 
// and loking at the next digit 
void propagata( PriorityQuestypothesis>* hpq, int stateId );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mypothesis( Mypothesis( h ) (
    currentScore = h.currentScore;
    nextWordIndex = h.nextWordIndex;
    data = h.data;
    assecpy( wordMistoryArray, h.wordMistoryArray, sizeof( wordMistoryArray )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    long currentScore;
// index into wordMistoryArray
long nextWordIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // array that keeps track which digit
int wordHistoryArray[5];
int* data;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // Memory manager
static OneShotHeap heap;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void clearUpNewNords( Recognizer* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                long value() (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // Constructor

Nypothesis() ( currentScore = 1000; nextWordIndex = 0; data = 0; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return( wordhistoryArray( 0 ] * 10000L * wordhistoryArray( 1 ] * 
+ wordhistoryArray( 2 ] * 100L * wordhistoryArray( 3 ] * 
+ wordhistoryArray( 4 I );
     30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in the zip we are dealing with
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מש, הויסיחסונים

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// hashed array of lists of cities. The hashing is done on the city name
class ZiploCityMS: public MS< CitySt >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // hashed array of lists of cities. The hashing is done on the zip class CityloZipHS : public HS< CitySL >
                                                                                                                                                                                                                                                                                                                // linked tist of State name and their index into the class StateZip class StateIpSL >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  public:
    CityToZipMS( unsigned manSize = 8192, unsigned initialSize = 2 )
    : HS< CitySt >( manSize, initialSize ) ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      class CitySL : public Slinks CitySL >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Singly linked list of cities
// Each city knows its zip and has a pointer to its name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #define WILDZIP
                                                                                                                                                                                                                                                                                                                                                                                                                                protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CitySL( long z, char* n ) (
zip * z; name * n;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unsigned keyHash( const SLinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int compare( const SLinkBase*, const SLinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unsigned keyHash( const StinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  friend class CityToZipMS;
friend class ZipToCityMS;
                                                                                                                                                                                                                                                                                                                                                                                                int compare( const SlinkBase*, const SlinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       so unen wordid;
bool zipAgreesWithState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZipHypothesis" zh;
char" cityHame:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   State?ip*
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ÷
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                                                                                                                                                                               MSHC$2.11 7-22-95 2:12p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          //Hashed array of linked states
class StateToStateZipMS : public MS< StateToStateZipSL >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             class State2ip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protected:
unsigned keyHash( const StinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 long startZip, endZip;
int upsID;
bool isPureState;
CityToZipHS cZz;
ZipToCityHS zZc;
                                                                                                                                                                                                                                                                                                                                                                                                  static int initxSq char* filename );
static void initZipioUsaStateZip();
// get state name for Itip
static StateZip* findStateZip( long Zip );
static StateZip* findStateZip( char* stateName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // memory manager static OneShotHeap osHeap;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StateToStateZipSL( int i, const char* n ) (
usaIndex = 1; name = n;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    const char" stateMame() { return name; } 
char" ctylo2/pd char" city, AC< long > *zips );
bool isPure() { return isPureState; }
void pure( bool truefelse ) { isPureState = truefelse; }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int compare( const StinkBase*, const StinkBase* ) const;
                                                                                                                                                                                                                                                                                                                                   static StateToStateZipSt* findStateToStateZipSt( char* stateMame );
static void ziploStateCittes( ZipMypothesia* , AC< CityMypothesia >* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  State2ipt const char*, const char*, const char*, const char*, const char* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               const cher *twoLetterCode;
                                                                                                                                                                                                                                                                                               static const char* findStateMame( long zip )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // hashed state names static StateloStateZipHS; static unsigned char zipioUsaStateZipi 1000 ]; static unsigned short* firstDigitBitField; static unsigned short* firstDigitPairBitField;
  30
                                                                                                                                                                                                                                              StateZip* 61 * findStateZip( zip );
                                                                                                                                                                                                     // validate first digit as legal for that state
  35
                                                                                                                                                                            Page 2 of 3
       40
                                                                                                                                                                                                                                                   return( st ? st->name : "# );
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5	TA SEC	); #endif	static bool isfirstDigittegal( / validate first 2 digit static bool serfirstDool // validate first 3 digit static bool arefirstThreed atatic bool arefirstFiveDigitt
15	NASSACSZ. N 7-22-95 2:12p		isfirstDigittegal( int dgt], int stateId ); late first 2 digit as legal for that state boot arefirstDodigittegal( int dgt), int dgt2, int stateId late first 3 digit as legal for that state boot arefirstBreeDigitsLegal( int dgt1, int dgt2, int dgt3, arefirstFiveDigitsLegal( int dgt1, int dgt2, int dgt3, arefirstFiveDigitsLegal( int dgt1, int dgt2, int dgt3,
20		_	iteld ); state , int dgi2, int statefd ); state it1, int dgi2, int dgi3, int nt dgi2, int dgi3, int nt dgi5, int tgi3,
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<b>40</b>	W Q W	***	
<b>45</b> .			
<b>50</b>	25V1		·

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Adefine TRUE
Adefine FALSE
Adefine YES
Adefine WO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       //finclude <std.h>
finclude <stdlo.h>
finclude <stsert.h>
finclude <stsert.h>
finclude <strategish.h"
finclude "sdapi.h"
finclude "sdapi.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Edeline SND NOSTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            //adeline sub_Loop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            define MAX.RECOG.CHOICES 10
define MAX_TEXT PAR 64
define WIT_DEMPILEGEN 60
define WO_DURREN_STATE ( { $0_$TATE }-1 }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #include "deq.h"
#include "arrcoll.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /* DRAGEPP.H */
/* Copyright (c) 1995 by Dragon Systems, Inc.*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        class Speechlask (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          adefine SCP_PROWPT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           int fileMameCup( const cher *f1, const cher *f2 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void beep( char* wavefile, int mode=1 ); // SWD_ASYNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #define SMD_TOGGLEMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bootine SD_CHAMMEL_BACKUP S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #indet dragcpp_h
#define dragcpp_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             / in emaystem.h the following defines exist...
/ Addefine SMD SYRC 0x0000 /* play i
/Addefine SMD SYRC 0x0001 /* play i
/Addefine SMD_MCDEFAULT 0x0002 /* don't
/Addefine SMD_MCDEFAULT 0x0004 /* (pazs
                                                                                                                                                                                                                                                                                                                  static void setPar( const char* parName, char* val
static void setPar( const char* parName, int16 val
static void setPar( const char* parName, int32 val
                                                                                                                                                                                                                                                                                                                                                                                                                                                        static void getPar( const char "parliame
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inlic char verabul(128);
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IASK tack;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    o-o-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0x0008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0x0010 /* don't stop any currently playing sound
                                                                                                                                                                                                                                                                                   7-22-95 2:120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /* play synchronously (default) */
/* play synchronously (default) */
/* play synchronously (default) */
/* don't use default sound */
/* (pasSoundMasse points to a mesory file *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /* loop the sound until next sndPlaySound
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        cher* val );
int16* val );
int12* val );
ums12* val );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          class Recognizer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                иналичнаналичнаналичнаналичнаналичнаналичнаналична
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HILLIHITATIA AMAMATAAN AMAMATAAN AMAMATAAN AMAMATAAN AMAMATAAN AMAMATAAN AMAMATAAN AMAMATAAN AMAMATAAN AMAMATA
HILLIHITATIAN AMAMATAAN A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>6</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Speechlask( char *taskName, ap er*) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ArrayOfRacogResults() ( recogVoc = 0; recogState = 0; recogUser = 0; isCont => = 0; recogStatus.nChoices = 0; )
                                                                                                                                                                                                                                                                                                              // utt maintenance const SD UTT utt(); const int index();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SD_VOC vocID( int i=0 ) const;
SD_VORD wordId( int i=0 ) const;
SD_VORD wordId( int i=0 ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            UttCharme(();
virtual 'UttCharme(();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SD UIT uttutt;
int uttindex, nextindex;
ther "uttProapt;
ArrayOfRecogResults "choices;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SD_VOC recogUser;
SD_VOC recogVoc;
SD_STATE recogState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RECOGN STATUS recogstatus; IRAIN_STATUS trainstatus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RECOG_RESULT_ENTRY recogResults | MAX_RECOG_CHOICES 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int wordCount() const;
int getDistance( ) const;
int getMame( char* textbuf, int sizebuf ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bool isCont;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SO_STATE japTransition( int i=0 ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static void setPar( const char* parliame, uns32 val );
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                                                                                                                                                                                                                                                                                                                                                                                               Audio Input
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void SD_CALLBACK _export (*sdErrHandler)(int, ch
                                                                                                                                                                                                                                                                            1010
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class WindowsliveCharmel : public UltCharmel (
protected:
SD_CHAMMEL mic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // returns the old listen state (0,1) virtual bool ististening(); // returns the current (isten state virtual bool notifycharmel( SD_CMANNEL_EVENT );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // efter giveAwayUtt()'s utt=0, prompt = **;
50 UTT giveAwayUtt( UttDharmel* tolle );
50_UTT giveAwayUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      virtual boot peekPrompt( char* buf, int bufsize, int promptsAhead=1 );
virtual bool cambackupt int );
virtual bool nextPrompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       virtual bool listen( bool ); // sets a new listen state
                                                                                                                                                                                                                  WindowsLiveCharmel( const char* promptfname=0 );
'WindowsLiveCharmel();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Recogneeult califbrough
comat Recogneeult* result( int ithResult =0 );
the seaultisect cher* buf, int sizebuf, int ithResult =0
to wood resultied int ithResult =0 );
int resulties arece (int ithResult =1 );
int resultiescent();
int resulticami();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // prompt maintenance -- Script input const char* prompt(); void seffrongt const char* ); void seperateDigits( int maxikumDigits );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // playing Waves -- Audio Output
virtual void beept char* wavFileName, int mode=1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void endutt() ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  virtual SD_UIT peekUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                virtual bool open( SD_CHANNEL_EVENT_MANDLER= 0 ); virtual void close();
                                                                                                                                                                                                                                                                                                        boot chanisOn;
                                                                                                                                                                                                                                                                                                                                                                                       FILE *promptFile;
char *promptFilename;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    friend class Recognizer;
friend class WindowsAdaptCharnel;
                                                                                                                                                                                                                                                                                                                                               int flag;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int settlextindext int newlatue );
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                                                                                                                                                                                          DRAGOP.N 7-22-95 2:12p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // delete the utt, with the notion of 
// delete the utt, with the notion of 
// killutt an buffered utts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // maxtUtt on buffered utts
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   failure
success
  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 class WindowsFileCharmel : public WindowsLiveChannel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       class WindowsCollectChannel : public WindowsFileChannel (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Modfine SIZE_UIT_RING 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protected:
Uttcharvel uttling[ $12E UTT RING ];
int head, tail, point, advance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protected:
SD_CHANNEL uttfile;
char "uttfilename;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SD UIT startUtt();
SD UIT pechutt();
void nextutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       boal nextPrompt();
void nextUtt();
SD_UII peekUtt();
                                                                                                                                                                                                                                            Bool open( SD_CHARKEL_EVENI_HANDLER ); void close();
                                                                                                                                                                                                                                                                                                           WindowsCollectCharnel( const char* uttfname, const char* promptfname );
"WindowsCollectCharnel();
                                                                                                                                                                                                                                                                                                                                                                                                             virtual void outputUtt( UttChannel* uch );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bool listen( bool );
bool notifyCharmel( SD_CNANNEL, SD_CNANNEL_EVENT );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void killutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bool open( SD_CHANNEL_EVENI_MANDLER );
void close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD_CHANNEL_EVENT_HANDLER notifyRoutine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void beept char* wavFileName, int mode = 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool open( SD_CNAMMEL_EVENT_MANDLER );
void close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int includex( int i ); int decludex( int i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WindowsfileCharmel( comst char* token, comst char* prompt=0 );
WindowsFileCharmel();
                                                                                                                                                                                                                                                                                                                                                                                                                                                             int inchead();
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l listen( bool );
| ististening();
| notifyCharmel( SD_CHANNEL, SD_CHANNEL_EVENT
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                                                                                                                                                                                                                                                                                                                                                                                              ::
                                                                                                                                                                                                                                                                                                                                                                                            sends out the utt
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::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       class VocStateMachine : public DLink< VocStateMachine > {
    // A slave class of a recognizer...
// the vocabulary is a user independent part of the database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          class VocStateMachine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      class WindowsAdaptCharmel : public WindowsCollectCharmel (
   protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void killutt();
void purge();
=> // charnel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp utt startutt();
sp utt startutt();
void mextutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void outputUtt( UttChannel* uCh );
Recognizer *recog;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bool open( SD_CHANNEL_EVENT_NAMDLER ); void close();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool fisten( bool );
bool notifyCharme(( SD_CHANNEL, SD_CHANNEL_EVENT );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bool carBackup( int nurBack );
bool peekPrompt( char* buf, int bufSize, int promptsAhead =1 );
bool nextPrompt();
                                                                                                                                                                                                                                                                                                                                   SD WORD ITERATOR stateOword)terator;
SD_STATE word_iterator;
SD_STATE stateOfficerator; // -1 none, 0 eliverds, nonzer0 normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static Deq< VocStateMachine > vsmDeq;
static SD_SIAIE currentState;
                                                                                                                                                                                                                                                          SD_STATE_CHILD_ITERATOR childiterator;
                                                                                                                                                                                                                                                                                                                                                                                                                              SD_VOC voc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void flush();
                                                                                                                                                                                                                        void loadPhonetics();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pancer DANCER... we create a temporary recognizer to do buffered adapts... We use the voc and user information in the charmet.choice filet, the user and voc must still being around, you must not applicitly unloaded them... You are responsible for calling nextutt() and purpe() when you distant voca or users... you must clear the buffered utta and do your adapts before you switch them out
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // killUtt on buffered utts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // nextUtt on buffered utts
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                                                                                                                                                                                        DRAGOPP.II 7-22-95 2:12p
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                                                                                                                                                                                                           class UserPhonetics;
                                                                                                                                                                                                                                                                                                                ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SD_STATE firstchild();
SD_STATE firstchild();
SD_STATE nextchild();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SD_VOC setVoc( SD_VOC );
SD_VOC setVoc( const char* vname );
SD_VOC setVoc();
int getVocname( char* buf, int sizebuf, SD_VOC vtest=0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SD VOC open( const char* );
void save( const char* =0 );
void close( const char* =0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SD_WORD firstWordId( SD_SIAIE=-1 );
SD_WORD nextWordId();
SD_WORD nthWordId( long index );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SD_SIATE getState( const char* statename, SD_SIATE paramet=0 );
SD_SIATE getState();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SD_STATE setState( SD_STATE hState );
SD_STATE setState( const char* statename, SD_STATE parant=0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // addword()'s and buildword()'s add to the current voc
50 MORD addword( 50 MORD );
50 MORD addword( comet cher* );
50 MORD buildword( comet cher* spelling, comet cher* phr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SD SIAIE newState( const char *newStateHamo ); void includeState( SD SIAIE stateIoInclude ); void deleteState( SD_SIAIE hState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void (istState( long numbres =0, file* fout =0 );
(ong wordCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VocStateMachine();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      size t wordName( 50 MORD w, char "buf, size t buflen );
size t stateMame( 50 STATE w, char "buf, size t buflen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SD_SIAIE japiransition( SD_MORD haord );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SD_WORD wordid( const char 'name );
                                                                                                                                                                                                                                                                                                                                        friend class Recognizer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool deleteWord( SD_MDRD ); // currently does not search states bool deleteWord( comst chare ); // currently does not search states
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bool wordflesHodel( SD_WORD w );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bool wordlaActive( SD_WORD NWord );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void updateState( SD_WDRD );
void updateState( const class Recognesuit* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UDRD buildWord( commet char* );
UDRD buildWord( commet char* spelling, commet char* shrase );
     30
                                                                                                                                                                                                                                                                                                                                                                                    removeWordfromState( SD_WORD ); removeWordfromState( const char* );
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class UserPhonetics : public OLink< UserPhonetics > {
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               class Recognizer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protected:
static begs userPhonetics > upDeq;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sb usem setuser( sb usem u );
sb usem setuser( const char* );
sb usem getueer();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sb usem open( const char* =0 );
void close( const char* =0 );
void save( const char* =0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       static SD_USER activeUser;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Another slave class of a recognizer...
// This is the user dependent phonese set
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Urichannel "charvel;
UserPhonetics userPhonetics;
// UserLanguageHodel userLanguageHodel;
VocStateMachine via;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   friend class Recognizer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void active();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int getUsername( chare bul, int sizebul, SD_USER ulest=0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UserPhonetics();
"UserPhonetics();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SD_USER user;
                                                                                                                                                                                                                                                                                                                                                                       SD_REJCODE adapt();
SD_REJCODE contAdapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                SD_REJCODE recog( AC< 50 MORD > *passibru *0);
SD_REJCODE contRecog( int maxWords *0, int minWords *0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Recognizer();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADAPILM PARAMETERS adaptLmPars;
bool adaptLm;
                                                                                                                                                                                                                                                                                                                         SD_REJECODE collect();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RECOGN PARAMETERS recognars;
TRAIN_PARAMETERS trainmars;
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                                                                                                                                                                                                                     void setRecogParst intlo maxC=MAX_RECOG_CHOICES, intlo rejl=1, intlo intlo va=HO, intl
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                                                                                                                                                                                                  DELAGOP. III 7-22-95 2:12p
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                                                                                                                                                                                                                         int 16 distr=1000, int 16 comput=5,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void nextutt();
so utf peekutt();
void kittutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Channel call throughs
UttChannel* getChannel();
UttChannel* setChannel( UttChannel* newCh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void setAdapttmPars( bool adpttm =0,
    int32 tlaget =-1000000, int32 staget =-100000,
    SD_CONTEXT *ctxt=0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           const Recognesite result( int ithResult=0 );
SD_MORD resultid( int ithResult=0 );
int resultName( char" buf, int sizebuf, int ithResult=0 );
int resultDistence( int ithResult=1 );
int resultCount();
int confidence();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 const char* prompt();
void setPrompt( const char*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void selPars( );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void settrainParat int32 with =0, int16 tlrnce=5 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SD_UII giveAwayUtt( UttCharmel* tcMe );
SD_UII giveAwayUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool (stistening();
bool (isten( bool );
bool notifyCharme(( SD_CHANNEL ch, SD_CHANNEL_EVENT ev );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bool pestPrompt( char* buf, int bufsize, int promptsAhead=1 );
bool nextPrompt();
                                                                                                                                                                                                                                                                                     SD STATE actState( SD STATE hState );
SP_STATE actState( const char *name, SD_STATE parent=0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SD_VOC setVoc( SD_VOC voc );
SD_VOC setVoc( const char *name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // VocStateMachine call throughs sp_uomb wordId( const char *name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void seperateDigits( int maxHumDigits );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          מ_חוו ייננו);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int promptIndex();
int setNextPromptIndex( int newValue );
                                                                                                                                                                                                                       SD SIATE getState( const char* statemame, SD_SIATE parent=0 );
SD_SIATE getState();
                                                                                                                                                                                                                                                                                                                                                           void closeVoc(const char* name=0);
                                                                                                                                                                                                                                                                                                                                                                                                                                            SD_VOC getVoc( );
int getVocname( cher* buf, int sizebuf, SD_VOC vlest=0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void beept char* wavfileName, int mode = 1 );
                                                                                                                                                                                                                                                                                                                                                                                                    void saveVoc( const char* name=0 );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ::
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class PhonemeRecognizer : public Recognizer
                                                                                                                                                                                                                                                                                                                                      protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void listState( long numbrds =0, file* fout =0 );

0 WORD firstWordId( 50 SIAIE st=-1 ) { return vsm.firstWordId( st ); }

50 WORD netWordId() { Teturn vsm.nesstWordId(); }

50 WORD netWordId( long Index ) { return vsm.nithWordId( index ); }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // UserPhonetics call throughs
SD_USER setUser( SD_USER usr );
SD_USER setUser( const char* name );
SD_USER getUser() { return userPhonetics.getUser(); }
int getUsernamet char* buf, int sizebuf, SD_USER ulest*0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // addword()'e and buildword()'s add to the current voc and state SD wolld addword( SD wolld ); SD wolld addword( comet char*); SD wolld buildword( comet char* spelling, comet char* phrase ); SD_wolld buildword( comet char* spelling, comet char* phrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD STATE firstChildState( SD_STATE parent SD_STATE firstChildState();
SD_STATE nextChildState();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void Recognizer::deleteState( SD_STATE hState );
SD_STATE Recognizer::neuState( char *neuStatetame );
void Recognizer::includeState( SD_STATE hState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SD_STATE implicansition( SD_MORD hWord ); SD_STATE implicansition( const char* name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bool wordfasHodel( somet chare name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      size_t wordtame( SD WDRD w, char *buf, size_t buflen );
size_t statefame( SD_STATE hState, char *buf, size_t buflen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void closeUser( const chare nemex0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void sayether( const chare name=0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bool removeMordfromState( SD MCRD );
bool removeMordfromState( const char* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bool deletellord( SD_WORD ); // currently does not search states bool deletellord( const char* ); // currently does not search states
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool wordisActive( SD_WOMD w );
bool wordisActive( const char* name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lang wordCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      void updateState( SD_WORD w );
void updateState( const cher* wordname );
void updateState( const RecogResult *res );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    word!s!reined( so word) ; word!s!reined( const cher );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             inline int UttCharmel::setNextIndex(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inline const SD_UII UttChannel::utt() ( return uttUtt; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inline int WindowsCollectChannel::incIndex( int i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inline int UttChannel::resultCount()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inline int UttCharnel::resultDistance( int ithResult )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline SO_WORD UtiCharmel::resultId( int ithResult )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inline const char* UttCharnel::prompt() ( return uttPrompt; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inline int UttCharnel::confidence()
                                                                                                                                                                                                                                                                                                                                                                                                                                              inline int WindowsCollectCharmel::decIndex( int i )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return nextindex * newValue;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PhonemeRecognizer( UttChannel* );
SD_REJCODE recog();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return( (i+1) & (SIZE_UTI_RING-1) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return choices->recogStatus.confidence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return choices->recogStatus.nChoices;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return( res 7 res->getDistance() : -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           const RecogResult *res * result( ithResult );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    return( res 7 res->wordld() : 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         const RecogResult *res = result( ithResult );
                                                                                                                                                                                                                                                                                                                                                                                        return( i=0 7 SIZE_UTT_RING-1 : i-1 );
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                                                                                                                                                                                                                                          Page S of o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int newfelue )
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5 10 15 20	inline SD_WORD VocStateMachine::wordidt const char *name )  DRAGGPP.N 7-22-95 2:12p	inline SD_STATE VocStateMachine::nextChild()	return SDState_NextChild( &childIterator );	<pre>inline SD_STATE vocStateMachine::firstChild( SD_STATE parent ) {     SDState_IterateChildren( getVoc(), parent, &amp;childiterator );</pre>	<pre>intine SD_STATE VocStateMachine::firstChild() {     return( firstChild( getState() ) ); }</pre>	return state;	<pre>inline SD_STATE VocStateMachine::getState() {</pre>	return setState( getState( statename, parent ) );	inline SD_STATE VocStateMachine::setState( const char* statename, SD_STATE paren ** t )	return state a sdstate;	inline SD STATE VocStateMachine::setState( SD STATE sdstate )	) intine SD_VOC VocStateMachine::getVoc() ( return voc;	inline SD_VOC VocStateMachine::astVoc( SD_VOC v ) {     return( voc = v );	<pre>vanDeq.addfirst( this ); ) inline VocStateMachine::"VocStateMachine() (     close(); vanDeq.remove( this ); )</pre>	<pre>voc = 0; state = MO_CURRENT_STATE; stateOffterator = -1;</pre>	<pre>inline void VocStateMachine::loadPhonetics() ( // after opening VocStateMachine</pre>	การการการการการการการการการการการการการก
30 35 40 45	inline \$D_YOC RecogResult::vocID( int i ) const  absert( idwordCount() ); return wordSpec( i 1.NVoc;  inline \$D_STATE RecogResult::stateID( int i ) const  Page 6 of 9	return distance;	inline int RecogResult::getDistance( ) const	inline int RecogResult::wordCount() const ( return rNords;	THERETHER HER THE	if( activeUsertruser ) SDUser_SetCurrent( activeUser + user );	inline void UserPhonetics::active()	return user;	close(); updeq.remove( this );	inline UserPhonetics:: 'UserPhonetics()	user = 0; upDeq.addFirst( this );	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		<pre>if( voc &amp;&amp; st )     return SDState GetHame( voc, st, buf, buflen ); if( buflen &amp;&amp; buf )     *buf*'\0'; return 0; )</pre>	inline size_t VocStateMachine::stateName( SD_STATE st, char *buf, size_t buflen	if( voc && w ) return SDWord GetHame( voc, w, buf, buften if( buften && buf') **Buf='\0'; return 0;	assert( voc && name ); return SDWord_GetHandle( voc, name ); ) inline size_t vocStateMachine::wordMane( SD_WORD w, char *but, size t buflen )

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intine void Recognizer::setAdaptLmPars( bool adptLm, int32 timBel, int32 simBel, SD_COMTEXT *ctxt )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inline void Recognizer::setRecogPars( intio maxC, intio mej), intio dist!, intio dist. intio comput, intio dist. SD_COMIEX! far *pCon, char far *pref )
                                                                                                                                                                                                                                                                                                                                        inline void Recognizer::setPars( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     filndel HONLAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inline SD_WORD Recogniult::wordld( int i ) const
                                                                                                                                                                            // Channel call throughs
inline UttChannel* Recognizer::getChannel()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inline void Recognizer::setTrainPars( int32 ught, int16 tirnce )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Speechlask::setPart "rejection-distance", (short )240 );
                                                                                                                                                                                                                                                                                                                                                                                                   adaptim = adptim;
adaptimPers.longlermRelevance = [Tetel;
adaptimPers.shortTermRelevance = simBe;
adaptimPers.pContext = ctxt;
                                                                                                                                                                                                                                                                                           setRecogPars(); setTrainPars(); setAdaptLmPars();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       trainPara.tolerance - tirnce;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        assert( iswordCount() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               assert( iswordCount() );
                                                                                                                                  return channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ecogPers.profix = prof;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ssert( maxC <= MAX_RECOG_CHOICES );
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Speechlask::setPar( "use-pelconf", (short )1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aputation a comput;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return wordSpeci i ).hState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   return wordSpect i ).hWord;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inline bool Recognizer::notifyCharnel( SD_CHANNEL ch, SD_CHANNEL_EVENT ev )
                                                                                                                                                                                    inline const Recognesult's Recommission
                                                                                                                                                                                                                                                                                              inline boal Recognizer::nextPrompt()
                                                                                                                                                                                                                                                                                                                                                                                                     inline bool Recognizer::peekPrompt( char* buf, int buffize, int promptsAhead )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inline SD_UTT Recognizer::utt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inline int Recognizer::promptIndex()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inline bnot Recognizer::listen( boot onOff-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inline boot Recognizer:::slistening()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inline int Recognizer::setRextPromptIndex( int newValue )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inline void Recognizer::setProspt( const chare p )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intime const char* Recognizer::prompt()
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return channel. > setNextIndex( newValue );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UttChannel* oldCh = channel;
channel = newCh;
return oldCh;
                                                                                                                                                                                                                                                    return channel ->nextPrompt();
                                                                                                                                                                                                                                                                                                                                                              return channel-speekPrompt( buf, bufSize, promptsUhead );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  assert( charmel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assert( channel ); return channel->index();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                assert( channel ); channel->setPrompt( p );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           assert( channel ); return channel->prompt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return channel > notifyChannel( ch, ev );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               assert( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return channel->listen( onOff );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    esseri( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return channel -> ist istening();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assers( newCh );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  return charmel-butt();
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intine int Recognizer::resultCount()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inline int Recognizer::resultName( char* buf, int sizebul, int ithResult )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline void Recognizer::seperateDigits( int maxHumDigits )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inline int Recognizer::confidence()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in line int Recognizer::resultDistance( int ithResult )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inline SD_UIT Recognizer::peekUtt()
                                                                                                                                                                                                                                                                                                                                                                            inline SO_VOC Recognizer::setVoc( SO_VOC voc )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intine SD_UIT Recognizer::giveAuayUtt( UttCharrel* toMe )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // VocStateMachine call throughs inline SD_MORD Recognizer::wordid( const char *name
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inline void Recognizer::beept cher* wavFileName, int mode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nline SD_UII Recogniter::giveAmayUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ntine void Recognizer::killUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nline void Recognizer::nextUtt()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return charmet -> resultName( buf, sizebuf, ithResult );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return channel->giveAwayUtt( tolle );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             charret->seperateDigits( maxHumDigits );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return charmet->resultDistance( ithResult );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return charmel -> confidence();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return charmel -> resultCount();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                assert( channel );
return channel->result(); ithResult );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 assert( charmel ); charmel-skillUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                essert( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return channel->giveAwayUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assert( channel ); channel->nextUtt();
                                                                                                                                                                                                                                                                                                                            return( vsm. setVoc( voc ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                            return van.wordtd( name );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   charmet ->beept wavfileName, mode )
::beept wavfileName, mode );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return channel->peekUtt();
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                                                                                                                                                                                                                                         DILAGOPP.II 7-22-95 2:12p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline int Recognizer::getVocnamet char* buf, int sizebuf, SD_VOC vfest )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inline SO_VOC Recognizer::getVoc( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inline SD_SIATE Recognizer::getState()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inline SD_STATE Recognizer::firstChildStatef SD_STATE parent)
                                                                                                                                                                                                                                                                                                                               inlink size_t Recognizer::statekame( SD_STATE st, char *buf, size_t buflen )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //inline void Recognizer::updateState( SD_WORD w )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inline SD_STATE Recognizer::firstChildState()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inline SD_STATE Recognizer::getState( const char* statename, SD_STATE parent )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inline SD_STATE Recognizer::setState( const char *name, SD_STATE parent )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inline long Recognizer::wordCount()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      intine void Recognizer::listState( long numbrds, flt8* fout )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inline SD_STATE Recognizer::nextChildState()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   //inline void Recognizer::updateState( const RecogResult *res )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /inline void Recognizer::updateState( const char* wordhame )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assert( vsm.voc ); return vsm.setState( hState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return vsm.getVoc();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       assert( vsm.voc ); return vsm.firstChild();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( vsm.voc ); return vsm.firstChild( parent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          assert( vsm.voc ); return vsm.getState();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  essert( vsm.voc && name); return vsm.setState( name, parent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return vsm.getVocname( buf, sizebuf, wlest );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( vsm.voc ); return vsm.getState( statename, parent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               assert( vsm.voc ); return vsm.nem(Child();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vsm.listState( numberds,
                                                                                                                                                                                                                                                                                                                                                                                                                  return vsm.wordCount();
                                                                                                                                                                                                                                                                                   return vsm.stateMame( st, buf, buflen );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assert( vsm.voc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              updateState( wordld( wordname ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      asseri( vsm.voc );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vsm.updateState( w );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vsm.updateState( res );
                                                                                                                                                                                                                                            Fage & of 9
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5 10 15	<pre>inline SD_UDBD Recognizer::buildword( const char* spelling, const char* phrase ) {     return vsm.buildword( spelling, phrase );     onaccyp.m 7-22-95 2:12p</pre>	return vam. mcblord( s );	return vsm.addWordt w ); intine SD_WORD Recognizer::addWordt const char* s )	3	inline void Recognizer::includeState( \$0_STATE hState ) ( vsm.includeState( hState );	inline SD_SIATE Recognizer::newStatet char *newStateMame )  ( return vam.newState( newStateMame ); )	vum.deleteState( hState );	inline void Recognizer::deleteState( SD_STATE hState )	return implicansition( wordld( name ) );	return vam.impleansition( hWord ); inline SD_SIATE Recognizer::jmpleansition( const char* name )	(n) the SD_STATE Recognizer::jepTransition( SD_WD80 hWord )	( vsa.clase( name );	inline void Recognizer::claseVoc(const chare name)	inline void Recognizer::saveVoc( const char* name )	return word!sActive( word!d( name ) );	intine bool Recognizer::word!sActive( const chare name )	return( vsm.wordtsActive( w ) );	intine boot Recognizer::wordtsActive( SD MORD w )	return wordNesModel( wordld( name ) );	intine bool Recognizer::wordHesHodel( const char* name )	return vam.wordMasModel( w );	inline bool Recognizer::wordHasModel( SD_WDRD w )	return vam. Hordhamet w, buf, buften );	intine size_t Pecognizer::wordManet SD_MURO w, char *buf, size_t buffen )	•
25	50																								
30	<u>.</u>	3				Hendif // dragcpp_h		return userPhonetics	inline int Recognizer::getUsername( chur*	( userPhonetics.close( name	inline void Recognizer::closedsert const chare	userPhonetics.save( name	inline void Recognizer::saveUser( const chare	return( userPhonetics.setUser( usr ) );	// UserPhonetics call throughs	-	return vsm.removeWordfromState( s );	intine boot Recognizer::removeWordfromState( const	return vsm.removeVordfromState( w	inline bool Recognizer::removeWordfromState( SD_W)	)	return vem deletewordt e 1.	return vsm.deteredord( w );	inline book Recognizer::deleteWord( SD_WORD w	
35 40	7aga 9 of 9							return userPhonetics.getUsername( buf, sizebuf,		÷:	closeUser( const char	nume );	saveUser( const chare	a.setUser( usr ) );	ir oughs		dframState( s );	removeWordfromState(	dframState( w );	removeMordfromState(			deleteWord( const cha	deleteWord( SD_WORD w	
<b>15</b>			÷					rebut, ulest );	but, int sizebut, SD_USER ulest )		· name )		name )		,			const char* s )		SO_LORO W )				٤	
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-Dec · 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8. Jun. 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oescription:
External definitions of all routines in the windows that can be called from another application.
                                                                                                                                                                                                                                                                                                                                                                           STRUCT PRINEADER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Revisions (latest first):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Author:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Copyright (c) 1986 by Dragon Systems, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ridefine LINEAR 16011 1
Ridefine LINEAR 16011 2
Ridefine USE ANY DEVICE Oxffff
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       midef COLLECT 12KH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #ifnde1 PUBLIC extern
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #itradet FEPEXT |
#define FEPEXT |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   # include
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fill: fepeat.h
                                                                                                                                                                  /*
Structure of the packets output by FEP Senior
rement in 7-22-05
                                                                                                                                                                                                                                                                                                                                                                                                                        first, the common header:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Idefine WAYEFRAMESIZE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PACKET STRUCTURES
There are two kinds of packets: Junior and Senior. Buth packet types contain a common header structure, followed by differing data sections.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note: windows.h must have already been included.
   5
                                                                                                                                                                                                                                                                 char status; /* Pachet status */
char apperm; /* Amplitude term for the frame */
char gain; /* Gain for the frame */
char randoms[3]; /* A random number */
char naf; /* Random number shift count */
char clipdist; /* Distance from clipping */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Author:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mper.h
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                                                                                                                                                              FEPENI.N 7-22-95 2:08p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    include "mper.h" to define number of parameters 
#PAR used in structure SIGPK! 
add structure GUEUE MAYE 
and doctare eeroBlaveBuf() for dealing with 
waveform recording 
pass userid's when setting parameters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created: 03-Sep-1991
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      struct FEPPARANS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      );
typedef struct _HTWAVEFORMAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRUCT _WAVEFRAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 struct SIGPKI
                                                                                                                                                                                   STEP_S_STATUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STILL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    typedef struct _QUEUE_WAVE QUEUE_WAVE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SILNCT ONENE MYNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typeded struct _WAVEFRAME WAVEFRAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WAVEFRAME huge "base;
unsid FAR "frmcnt;
unsid maxframes;
unsid framesRecorded;
unsid firstframe;
                                                                                                                                                                                                                Values returned by fep status().

NOTE: This structure must allign with A_METER, defined in DEAGON.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Structure of the parameter block argument for fEP_LISTEM.
WARRING: The module fepsr.c assumes that all of the fields in this
parameter block are integers.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     waveform format, returned by openHaveRecord()
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LODD sampleRate;
LODD sampleRate;
LODD hardwarehpid;
LODD begsil;
LODD begsil;
LODD bedsil;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            struct PKIMEADER header;
char jin(NPAR);
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                                                                                                                                                                                                                                                                                                                                        int maxgain;
int frampd;
int frampd;
int (thr;
int ainsp;
int endsit;
int minn;
int minn;
                                                                                                                                                                                                                                                                                                      int calibgain;
                                                                                                                                                                                                                                                                                                  /* Sample period in usec. */
/* Frame period in usec. */
/* Speech detect to thresh */
/* Speech detect to thresh */
/* With number of speech frames */
/* End of utter silence frames */
/* Begin of utter silence frames */
/* Speich threshold */
/* Amptern multiplier for
squelched frames */
/* Base gain used for computing amplitudes */
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MYWAVE FORMAT;
                                                                                                                                                            Page 1 of 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ``
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unsigned as; unsigned be; unsigned cu; unsigned du; unsigned db; unsigned bp; unsigned floss;
) REGISTERS, * PREGISTERS, NEAR
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DUCKE dOther;
NORD workerD;
NORD menID;
NORD prodID;
) VOLSTRUCT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ypedal struct
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int lothr;
int callibgain;
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/* Low threshhold */
/* Base gain used for computing amplitu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEAR . MREGISTERS, FAR . LPREGISTERS;
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ure FEPPARINS FAR *ipportum, LPSIR ipbuff,

xch_size, wORD num_blocks );

sch_int_UserID );
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## EP 0 762 385 A2

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/* SHeader: F:/
** DEAN $ */
/* LIBERR.N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gitdef DEBUG
ddefine assert(a) iffi(x)) \
    ErrError(_fitE__,_time__,"Assertion \"%a\" faited.",#x);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sitndet ERR H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /" routines that can be provided by the user "/
void Errfatal(const char "mmg); /" report an error stack problem "/
void ErrBottomfandler(void); /" default error handler at bottom of stack"/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #define ERR_OVERFLOW 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           princlude recting.ha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              typedef const char * MCDULE;
typedef void (*ERRHANDLER)!(int);
typedef void (*ERRHANDLER)!(int);
typedef void (*ERRHANDLER)!(); /* typedef void (*ERRHANDLER)!(); /* typedef void (*ERRHANDLERX)!); /* typedef void (*ERRHANDLERX)!]; /* typedef void (*ERRHANDLERX)!]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /* Backwards compatibility - please don't use! */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #define assert(a)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #define ErrTrap() setjap(*ErrPush())
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TERN jmp buf *ErrPush(void); /* use only via macro ErrTrap "/
TERN void ErrHandler(void (*handler)(void));
TERN void ErrHandler(void (*handler)(void *), void *p);
TERN void ErrHandler(void (*handler)(int), int i);
TERN void ErrError(MODUE module, int code, const char *msgfmt, ...);
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error handling from new driver
Error handling scheme used by new driver installed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright (c) Oragon Systems, Inc. 1990-1992
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Slog: F:/usr/local/src/lib/vcs/liberr.h_v
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void ErrRemoveAndCall(void (*handler)());
void ErrRemoveMandler(void (*handler)());
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void ErrContinue(void);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    const cher *ErrGetMessage(void);
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/* type passed to ErrhandlerP() */
/* type passed to Errhandler() */
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EXIERN const char 'ErrMessage(void);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wendit /* ERR_H_ */
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154

## EP 0 762 385 A2

5		•			/* NPAR.H */ /* Copyright (c) 1995 by Dragon Systems, Inc.*/ #define NPAR 16 //#define COLLECT_12KHZ
10	87.AA				c) 1995 by Dragon System 16 COLLECT_12KM2
15	MPAR.N 7-22-95 2:12p	·			ns, lec.*/
20					·
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35	Page 1 of 1				
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<b>4</b> 5			·		
50	pitor (/)			 	

## EP 0 762 385 A2

Tendi 1 Inline void operator new unsigned len, OneShotHeap heap ) class MemSt : public Stink < MemSt > #include "seq.h" #ifndel oneshot\_h /\* OMESHOT.H \*/ /\* Copyright (c) 1995 by Dragon Systems, Inc.\*/ polic: public: intine void operator new[]( unsigned ten, void atreadyMattocedMemory ) intine void\* operator newt unsigned len, void\* alreadyMallocedMemory ) inline void operator new[][ unsigned len, OneShotNeap heap ) protected:
 char "start, "end;
 unsigned heapChunkSize; return sireadyMailocedMemory; return heap->carveltUpAndGiveltAway( len ); return alreadyNellocedHemory; return heap-yearveltUpAndGiveltAway( ten ); void\* carveltUpAndGiveltAway( unsigned len );
void empty(); OneShotHeap(): 5 10 ONE \$101 . 11 7-22-95 2:10p 15 20 25 30 35 40 **45** 50

156

Binclude stdio.h>
Bendid its length km ddefine GETS(buf) FileGett /\* WOTE: no restriction or ddefine fGETS(pbuf,n,fp) i EXTERN void /\* macros for replacing ANSI-standard non-robust routines \*/
/\* NOIE: GETS and FGETS return EDF at end of file, not NULL \*/
/\* NOIE: the arpument to GETS AUSI be declared as a charil and #ifndef SEEKHODE DEFINED typedef enum (SM BEGINNING, SM\_CURRENT, SM\_END) SEEKHODE; #define\_SEEKHODE\_DEFINED\_ /\* Modifications

7. Sep. 92 003

typedefs of SEEKMODE and READMODE are now conditional.

22. Feb. 92 003

Filedrite's pbuf argument should be const void \*, not void \*, 8. Mar. 90 003

Added CETS and FCETS

20. Feb. 90 DCS

Filedrite had been misnamed as Filedrite EXTERN size t SITADET READMODE DEFINED typodet erum (RM EDFOK, RM ATEDF, RM\_EDFBAD) READMODE; dectine readmode defined Bitmet FILE M /\* LIBFILE.H\*/ /\* Copyright (c) 1995 by Oragon Systems, Inc.\*/ 5 fileRead(file 'pf, void 'addr, size\_t rbytes, READWOR rm);
fileSize(file 'pf); fileOpen(const char \*name, const char \*node);
fileClose(file \*pf);
fileGestline(file \*pf), char \*pbuf, size t bufsize);
filedrits(file \*pf, const void \*pbuf, size\_t nbytes); fileSeek(file \*pf, intl2 rbytes, SEEKMODE mode);
fileGetPosition(file \*pf); /\* kludge to test inclusion of stdio.h \*/ 10 LIBITLE.N 7-22-95 2:10p 15 20 25 30 35 Page 1 of 1 40 **45** 50

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public:
bool isHewlord;
50 uono word;
long value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Binclude "dragcpp.h"
Binclude "stack.h"
Binclude "oneshot.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bitndet hypo_h
Bdetine hypo_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            class ZipHypoAC : public AC< ZipHypothesis >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              class ZipHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adetine BAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /* MYPO.N */
/* Copyright (c) 1995 by Dragon Systems, Inc.*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             public:
ZipHypoACt unsigned initialsize = 5, unsigned incrementaize = 5 )
: AC< ZipHypothesis = ( initialsize, incrementaize ) ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 class Hypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                     public:
static OrmshotNeep heap;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protected:
static int confusionScore( 100 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void cleanupHeuAlords( Recognizer* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cher spelling( ull prompt LENGIM ); cher phreset ull plumpt LENGIM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZipHypothesis( Recognizer*, long zip, char* stateMamm );
ZipHypothesis( Recognizer*, const char* );
                                                                                                                                                                                                                                     hypothesis( Hypothesis& h ) {
    currentScore = h.currentScore;
    nestWordIndex = h.mastWordIndex;
    seencpy( wordMistoryArray, h.wordMistoryArray, sizeof( wordMistoryArray )
                                                                                                                                                                        void propagatet PriorityQue<Hypothesis>* hpq, int* data, int stateId );
                                                                                                                                                                                                                                                                                                                                                                   long currentScore;
long nextWordIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                  int wordMistoryArray( 5 );
                                                                                                                                                                                                                                                                                                                   Mypothesis() ( currentScore = BAD; nextWordIndex = 0; )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   extern void buildWypothesis( Recognizer*, ZipWypoAC*, char*, char*, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30
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finclude "defa.h"
finclude 'assert.h'
finclude 'string.h'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bilinder seq h
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    typedef int (*StinkCompare)( StinkBase*, StinkBase* );
// compare(Stink *a, Stink *b) ==> (a · b)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          class SLinkBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /* SED.M */
/* Copyright (c) 1995 by Dragon Systems, Inc.*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     class Seglase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      public:
    StinkBase() { next(ink = 0; )
    StinkBase *next() const ( return next(ink; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protected:
void settent( StinkBase* (ist ) { nextLink=list; )
void addrest( StinkBase* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            private:
SlinkBase *nextlink;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     public:
Sequese() ( f=l=0; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protected:
StinkBase *f, *1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void setMext( f* (ist ) ( SlinhDase::setMext( (SlinhBase*) (ist );
void addmext( f* (ist ) ( SlinhDase::addmext( (SlinhBase*) (ist );
// void remove() ( SlinhBase::remove(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      friend class SegBase;
friend class MashSegBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // StinkBase manipulation routines
StinkBase* first() const ( return 1; )
StinkBase* last() const ( return 1; )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            void addfirst( StinkBase* );
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class Seq : public SecBase (
public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ~~
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDITION OF THE STATE OF THE ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class HashSegBase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool contains( SLinkBase );
bool sorted( SLinkCompare );
long count() const;
'ScqBase() ( removeAll(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // constructors
MashSeqBase( unsigned maxSize = 8192, unsigned initialSize = 64 );
// destructor
MashSeqBase();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #if DEBUG
bool contains( T* list ) ( return SeqBase::contains( (SLinkBase*) (lst ); )
#endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // StinkBase manipulation routines
To first() const ( return (To) SegBase::first(); )
To last() const ( return (To) SegBase::last(); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bool validateSeq();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void removeAll();
Belse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void addlast( StinkBase* );
void addlext( StinkBase* list, StinkBase* newltem );
void addPrev( StinkBase* list, StinkBase* newltem );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $\inkBase** first() const;
$LinkBase** last() const;
$LinkBase** next( $LinkBase**
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool isEmpty() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void remove( I* list ) ( SeqBase::remove( (SLinkBase*) list ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 void sort( StinkCompare );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       void remove( StinkBase* list );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int count() const ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void removeAll() ( f=1=0; )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            p ) const;
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protected:
unsigned erreySize;
unsigned erreyUsed;
unsigned erreyMexSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inline MashSegBase:: "MashSegBase()
                                                                                                                                                                                                                                                                                                                                                           inline SlinkBase" HashSeqBase:: firstCollision( SlinkBase" v )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inline int HashSegBase::count() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inline void NashSegBase::removeAll()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               delete () array;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #iddef DEBUG
int checkCount() const;
#endif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 virtual int compare( const %link@ase*, const %link@ase* ) const % 0;
// compare returns 0 when there is a match (like stromp())
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        StinkBase* remove( const $LinkBase* v );
void removeAtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      StinkBase* firstCollision( StinkBase* v );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 stinkBase* add( StinkBase* v );
// adds v only if v does not aiready exist in the table (uses compare())
// returns the pointer in the table (v or the element that compare()s)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #!ide! DEBUG
assert( checkCount() );
#endi!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bool inArrayBounds( StinkBase** pp ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SlinkBase* find( const SlinkBase* v );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Standesee previ StinkBasee p) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  numStinks = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               StinkBase" array;
                                                                                                                                                                                                                                                                                                                                                                                                                          memset( erray, 0, arraySize * sizeof( void* ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     void grownrey();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                virtual unsigned keyMash( const SLinkBase* ) const = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             long numblinks;
                                                                                                                                                                                                                                                                                                         return array( keyHash( v ) & (arraySize-1) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              return nust inte;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           extern unsigned stringHash( const char* s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protected: unsigned keyHash( const StinkBase* ) const = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             I* firstCollision( I* e ) { return (I*) HashSedBase::firstCollision( (StinkB => ase* )e ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MS( unsigned manSize = 6192, unsigned initialSize = 66): MashSeqPase( manSize, initialSize ) ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int compared const StinkBase", const StinkBase" ) const = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  I* find( I* e ) ( return (I*) HashSeqBase::find( (SLinkBase* )e ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     !* add( !* e ) { return (!*) HashSeqBase::add( (SLinkBage*)e ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1** first() ( return (1** ) #athSeqBase::first(); )
1** last() ( return (1** ) #athSeqBase::last(); )
1** next( 1** e ) ( return (1** ) #athSeqBase::next( ($\inkBase** )e ); )
1** prev( 1** e ) ( return (1** ) #athSeqBase::prev( ($\inkBase** )e ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      I* remove( I* e ) ( return (I*) HashSeqBase::remove( ($Linkbase* ) e ); )
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5 10 15 20	AUTHOR: Jed Roberts CREATED: DP-Jul-01  DESCRIPTION DESCRIPTION This is the header file for the Dragon Speech Driver Application Phis is the header file for the Dragon Speech Driver Application Phis is the header file for the Dragon Speech Driver Application Phis is the header file for the Dragon Speech Driver Application Phis is the header file for the Dragon Speech Driver Application Phis is the header file for the Dragon Speech Driver Application Side: 12/4074/new/file file for the Store Settle Jak.  Revision on File Application Revision on the Mar 20 DR-25:25 1904 by DEAM Priver Version on 13.33 - cleanup of Ladapith Revision 2 on File Mar 20 DR-25:25 1904 by JED Priver Version 4.13.30 - like stamps added Added Statistime field in SD_UIT_INTO. Revision 3 on the Mar 20 DR-26:37 1904 by JED Revision 3 on the Mar 20 DR-26:37 1904 by JED Revision 3 on the Mar 20 DR-26:37 1904 by JED Revision 4 on Phys Mar 17 13:20:16 1904 by JED Revision 4.13.15 - first version under 11:89 Revision 4.13.16 - Revision 4.13.19 Revision 4.13.19 Revision 5.13.19 Revision 6.13.10 Revision	/* Sheader: F:/work/newd/inc/vcs/sdapi.h_v 1.72 21 Feb 1994 09:37:42 ** \$ */ /* FILE: sdapi.h DRAGOM SYSTEMS COMFIDENTIAL Copyright (c) Dragon Systems, Inc. 1991-1994
30 35 40 45	Rev 1.65 23 Jun 1993 17:62:18 FRANKS  Driver Version 4. 10.34 Anded Subvird, Build 1993 21:01:22 BEISY  Rev 1.55 11 Aug 1993 21:01:22 BEISY  Driver Version 4. 11.106  Rev 1.64 28 Jul 1993 12:03:08 BEISY  Driver Version 4. 11.107  Rev 1.63 23 Jun 1993 12:03:08 BEISY  Driver Version 4. 11.57  Rev 1.63 23 Jun 1993 12:03:08 BEISY  Driver Version 4. 11.57  Rev 1.61 09 Jun 1993 11:38:20 JED  Driver Version 4. 11.57  Rev 1.61 09 Jun 1993 12:03:08 BEISY  Oriver Version 4. 11.52  Rev 1.60 20 Hay 1993 07:10:08 JUELG  Driver Version 4. 11.52  Rev 1.60 20 Hay 1993 07:10:08 JUELG  Driver Version 4. 11.52  Rev 1.59 19 Hay 1993 16:00:12 JED  Driver Version 4. 11.53  Driver Version 4. 11.53  Rev 1.59 19 Hay 1993 16:00:12 JED  Driver Version 4. 11.53  Rev 1.59 19 Hay 1993 16:00:12 JED  Driver Version 4. 11.32  Rev 1.58 19 Hay 1993 16:00:12 JED  Driver Version 4. 11.32  Rev 1.58 19 Hay 1993 16:00:12 JED  Driver Version 4. 11.32  Rev 1.58 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.58 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Driver Version 4. 11.32  Rev 1.59 19 Hay 1993 15:00:12 JED  Driver Version 4. 11.32  Driver Version 4. 11.32  Driver Version 4. 11.32  Driver Version 4. 11.32  Driver Version 4. 11.33  Driver Version 4. 11.35  Driver Version 4. 11.35  Driver Version 4. 11.30  Driver	<u>u</u>

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Driver version 4.11:16
Added Shuser_Open1 and SDVoc_Open1 functions.
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Driver version 4.11.21
Cleaned up tabbing by removing all
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The following functions are not being released as part of Voicelools and have been soved into SDAPINH.H. these functions are still available for influses use, although you may find the simplier forms developed for the tool kit to be easier to use:
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void SD_ENIRPPI SDUSEr_SetEnv( SD_UNER Miser, const char far "phten,

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void SD_ENIRPPI SDUSEr_NotErnv( char far "pbtf, size_t thuf);

size_t SD_ENIRPPI SDUSEr_Maxterv( char far "pbtf, size_t thuf;

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Adefine TEXT_1
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30	void SD_ENIRTPI SDNord_Copylo  uns32 SD_ENIRTPI SDNord_Listing uns32 SD_ENIRTPI SDNord_Listing uns32 SD_ENIRTPI SDNord_Listing const char far "prefia, SD_ENIRTPI SDNord_Listing const char far SD_ENIRTPI SDNord_Listing splace SD_ENIRTPI SDNord_Listing typedef uns32 SD_STATE; struct SD_STATE_CHILD_LIERATOR)  struct SD_ENIRTPI SDState_GetN void SD_ENIRTPI SDState_GetN
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5		I SD ENIRYPI S	id SD_ENIRYPI S	void SD_EMTRYPT SOMORD_Learn1(	SIRUC(.IRAIN_STATUS int16 rGood; int16 rBad; );		RECOG_STA	const charge in a	SO UT 10		SD_SIMIE hState;	11775D 51416 5DI				SIRUC( RECOG SIRIUS ) ( SD REJCODE rejCode;  ini16 confiden  int16 nChoices );		nchoices copies of RECOG_RIUC( RECOG_RESULT_ENTRY ) ( int 16
10	. 1 0/0	void SD_ENIRYPI SDWord_AdapitmN( SD_VDC hVoc, SD WORD hWord, SD_CONIEXI far *prontexi );	void SD_ENIRYPI SDWord_Irainl( SD_WOC hVoc, int rWords, const char int rutt, SD_UTI far *putt, IRAIN SIAIUS far *pStatus, SD_REJCODE far *pRejCodes );	DWord_Learn1( SD_VX) SD_CXI SD_CXI char   RECCC.	<b>S</b> .	IO) IVLAVOV	IUS far *pMecStatus	reconst char far "prefix,  RECOG RESULT ENIRY for "presults,  size i lessults	tt, of of parages,	State Recog2( int nS)	Scale:	RECOG_RESULT_ENTRY for size \$ leavits, RECOG_SIATUS far *pRecS	)State_ContRecogit S	Resident Second	SD [HIRTPI SDState_Recogit SD_W	rejCode; confidence; nChoices;		, .
15	7-22- <b>9</b> 5 2:12p	VOC hvoc, SD WORE CONTEXT far apicor	SD_WDC hVoc, int rwords, con int rutt, SO_UTT far "putt, TRAIN STATUS far "pStatus, SD_REJCODE far "pRejCodes );	( SD_WOC hVoc, int miords, const cl SD_WIT hNtt, RECOG RESULT_ENIRY SD_COMMENT for "pContext, char far "profix, RECOG_STATUS for "pRecStatus );		¥	=	ite.		ates,		ECOG RESULT ENTR	D VOC hvoc, SD S D VII NUTT, SD C	char far "prefix, RECOG RESULT ENIRT far "pResults aize E IResults, RECOG SIAIUS far "pRecStatus	C hVoc. SD STATE hState.			ITRYS. */
20		hword,	is, const char far putt, tus, ides );	int muords, const char for "pName, RECOG RESULT_ENIRY for "pResults, or "pContext," effx, "pRecStatus );								*pRecStatus );	SD_SIATE hState, SD_COMIEXT far *pContext, int maxWords.	cStatus );	hState.			NIRTS. */ Actual number of entries is nwords */
25			r *pliane,	r *pHame, Results,									text,	·				* */
30		•				Bendit /* _SDAPI_N_ */	#ifdef cplusplus ) /* entern "C" */ #endif	VOID SO ENIRYPT	void SD_ENTRYPT	SOPAR TYPE SO ENTRYPT	SO PAR SO ENTRYPT	cher reserved(4);	#Inder SOPAR BOOL #define SOPAR_BOOL #endif	#define SDPAR_UNS12 #define SDPAR_VOID typedef uns16 SDPAR_TYPE;	#define SDPAR BOOL 16	#define SOPAR INTO	typedef uns16 SD_PAR;	222
35								SDPar Itera	SDPar_SetVa	SOPar_Getty	SDPar GetNa	Ĉ	•	PE;	, v.	wn-0		PARAME I
<b>40</b>	Page 7 of 7			٠,	·			so_pam_itEnaton for "piter );	ilue( SD PAR hPer, void for "pvel,	SOPar GetValue( SO PAR hPar ); SOPar GetValue( SO PAR hPar, void fa	SDPar_GetHandle( const char far "phane ); SDPar_GetHane( SD_PAR hPar, char far "pOuf, size t (Buf);	÷	/* for backwards compatibility */	٠.		·		PARAMETER MANAGEMENT
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Driver version 4.13.4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHOR: Dean Sturievant CREATED: 27-Jul-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright (c) Dragon Systems, Inc. 1992-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Header file for INHOUSE SDAPI functions.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Revision 1 on thu Mar 17 13:20:16 1994 by DEAM
Driver Version 4.13.25 - first version under ILIBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Revision 2 on Fri Har 25 15:05:38 1994 by JED
Driver version 4.13.29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Revision 3 on lue Mar 29 09:48:37 1994 by ADRIAN briver Version 4.13:30 : Time stamps added. Added SDUTE Get1 to support the time stamp, and left SDUTE Get to provide backward compatibility.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Revision 6 on Thu Apr 16 16:34:42 1996 by DEAN
Driver version 6.13.38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Revision 2 on Thu Apr 07 18:44:37 1994 by Priver version 4.13.35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ldded SDLm_Reorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Revision 2 on Wed Mer 30 18:55:55 1994 by DEAM iniver Version 4.13.33 - cleanup of sdapi*.h
                                                                                                                                                                                                                                                                                                                                                                                                                  laded SDWord_SettmlCount.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Revision 4 on Tue Mar 29 14:23:31 1994 by DEAM river Version 4.13.31 - cleanup
                                                                                                                                                                                                                                                                                                                                                                                                                                            Rev 1.16 04 Feb 1994 13:40:36 iver version 4.13.12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            removed include of sdapix.h
more use of SIRUC macro
no longer define _INMOUSE_SDAPI_FUNCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  some beautification.
STATE MACHINE was a void far ", now it's an unu32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nged 'del' argument to SOSIMach Update to 'boot'
lectared SOMord SettalCount to return void.
boved a PUBLIC from in front of SDLm Reorder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  disabled SDStMach_GetCurrentState
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              f:/work/newd/inc/vca/adaptirth.h_v $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             structures moved to adapta.h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transition opcode CALL_GOID.
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                                                                                                                                                                                                                                                                                                                                                                                                                                     #irnder SDAPIINH N
                                                                                                                                                                                                                                                                                                                                                              #ifdef cplusplus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rev 1.7 24 Feb 1993 15:18:18 JOS
Oriver version 4.10.36
Phoneme recognizer and minor bug fixes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rev 1.2 10 Aug 1992 10:14:10 JED 
Driver Version 4.01.35 
Added recogn, which is an inhouse version of the recog routines. 
The first enhancement is that it supports the pass thru list (words 
The first enhancement is that it supports the pass thru list (words 
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The first enhancement ).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rev 1.5 02 Nov 1992 10:19:12 JED
Driver Version 4.04.24
Added Sovoc_GetExtendedinfo & Sostate_GetExtendedinfo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rev 1.9 11 May 1993 14:40:24 JOELG Oriver version 4.11.16 -- added SOUser_Open and SOVoc_Open
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rev 1.12 01 Sep 1993 20:06:14 DEAN Driver Version 4.11:131
Added SOLm_DecayAdjust and SDLm_GetCate (GRG)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rev 1.4 15 Aug 1992 12:24:42
Driver Version 4.01.38
Added extern "C".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Added SDXUtt_MakeRandom, and related functions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rev 1.6 08 Nov 1992 15:07:14
Priver Version 4.04.29
Added SDWord_GetLmitount.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rev 1.10 17 May 1993 15:36:32 JOELG priver version 4.11.28 Moved SDChannel_GetInfo in from SDAP1.H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Added SDState_PhonRecog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Made all pointers in the declaration far.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to be passed thru prefiltering).
It also returns bestScore, the score of the best word.
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because we do not want to expose them in the toolk
for more details.
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version 4.11.115
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (00 lk it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
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#ifratef SDAPI H
#include "madapi.K"
#endif
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SD_VOC SD_ENTRYPT SDVoc_Open( const char far *procfileName, const char far *proce );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SO_USER SO_ENTRYPT SOUSEr_Open( const char far *pfiteName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SD_UIT SD_ENTRYPT SOULT_MakeRandom( SD_WORD hWord);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /* The types of transitions defined are:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uint SD_ENIRYPI SDPar_GetNumPar( void );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRUC( RECOG_PARAMETERS ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                typedef unis32 SD_STATE_MACHINE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   int16 marchoice;
int16 rejihreh;
int16 distihreh;
int16 computation;
SD_COMIENT for "pcontext;
char for "prefix;
                                                                                                                                                                                                                                                                               ¥ §
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOOL isSpeechAveitable; /* YE
SD_CHANNEL_TYPE type;
                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CADE ! HED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SO_ENTRYPT SDCharmel_GetInto(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     shicon;
                                                                                                                                                                                                                                                                                                                                                                             No transition has been defined. This can be used for words and states for which the default transition should be used. The default transition is determined by searching rectralizely up the including states until a defined transition is found, it is treated in found, it is treated in found.
                                                                                                                                                                                                       Call a state, pushing the specified return state onto the stack. When a return is executed, the return state becomes the current recognition state.
                                                                                                                                                                                                                                                                                     Go to a specific state.
                                                                                                                                                                                                                                                                                                                       Stay in the current recognition state.
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   From STATE.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          From CHANNEL.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ES if the charmet is open
ES if this charmet is claimed
ES if the mic is on for this ch
ES if the phys mic sw is on
ES if speech is available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO_CHANNEL_INFO for *pinfo );
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25
                                                                                                                                                                                                                                                                                                                                                                                                               SIRUC( SD_STATE_INFO ) (
int)27 rActive;
int)27 rActive;
SD_STATE_INFO | fransition;
SD_STATE hParent;
int16 rChildStates;
int16 rEnv;
int16 rEnv;
int16 rendrer;
                                                                                                                                                                                                                                                                                 SIRUC( SD STATE WORD INFO ) (
BOOK 15 in 15 take;
BOOK 15 in 15 take;
BOOK 15 in 16 take;
SD IRANSITION Fransition;
in 16 rEnv;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adefine UNDEFINED
Adefine JND
Adefine CALL
Adefine REI
                                                                                                                                                                            void SD_ENIRYPI SDState_GetInfot SD_VDC hVoc;
SD_STATE hState,
SD_STATE_INFO far *pinfo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIRUC( SD TRANSITION ) (
SDfsgÖpCode OpCode;
union (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #define CALL_NOP 5
#define CALL_GOTO 6
typedef uns18 SDFsgftpCode;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ) ergs;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  מור מוס
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CALL NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         struct (
SD_STATE callState;
SD_STATE returnState;
) call;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 struct (
SD_SIAIE gotoState;
) call_goto;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          struct (
SD_SIATE callState;
) call_nop;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     struct (
SD_SIAIE destState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Call a state, pushing the current recognition state onto the stack. When a raturn is executed, the current state becomes again the recognition state.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This opcode is only valid for included states. This causes the call to occur BEFORE considering transitions specific to the word.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pop the next state off of the stack. States are pushed onto the stack via CALL and CALL_MOP transitions.
  35
                                                                                                                                                                                                                                                                                                                                                                                                               /* current number of words in the state
/* number of active words
/* transition associated with state itself
/* parent state or 0
%; /* number of child states
/* number of included substates
/* number of environment variables
/* tags indicating the word orderings avail
                                                                                                                                                           Page 2 of 5
    40
      45
      50
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5 10 15 20	## 0 \$50.0F118#.N 7-22-95 2:00p	SD_SIAIE_MACHINE SD_ENIRYPT SD\$tMach_Update( SD_VCC.hvc) HACHINE hMachin, SD_Undo hVord, SD_Undo hVord, bool delMachin );	SD_STATE_MACHINE SD_ENTRYPT SDStNach_New(SD_VOC hVoc, SD_STATE hState); void SD_ENTRYPT SDStNach_Delete( SD_STATE_MACHINE hStNach );	// STATE MACHINE MANAGEMENT		INT SD_ENTRYPT SDState_ContRecog( SD_VOC hVoc, SD_UTATE MACHINE hStMach, SD_UTATE MACHINE hStMach, SD_UTATE MACHINE hStMach, SECOG_RESULT ENTRY far "pResults, Size T TRecoults, RECOG_STATUS far "pPar, RECOG_STATUS far "pMccStatus);	int SD_ENTRYPT SDState_Recogt SD_VOC hVoc, SD_SIATE histor, SD_SIATE histor, SD_SIATE histor, SD_SIATE histor, SD_SIATE histor, SD_SIATE histor, SD_SIATE STATUS for "pResults, RECOG_SIATUS for "pRecStatus ); RECOG_SIATUS for "pRecStatus );	void 5D_EMERTPT SDState_SetStateTransition( SD_VOC hVoc. SD_STATE hState, SD_STATE hState, SD_TRAMSITIOM trans );	void SD_ENTRYPI SDState_SetWordTransition! SD_VOC hvoc, SD_SIATE hState, SD_WOOD habord, SD_TRANSITION trans ); SD_TRANSITION SD_ENTRYPI SDState_GetStateTransition( SD_VOC hvoc, SD_SIATE hState); SD_SIATE hState);	SD_IRANSITION SD_ENTRYPT SDState_GetWordTransition( SD_VOC hvoc, SD_SIATE histate, SD_WORD hvord );	void 50_ENTRYPI SDState_GetWordinfot SD_VOC hVoc.  SD_VARE histate,  SD_VARE histord,  SD_STATE_MORE_NORD_NETO for *pinto );  SD_STATE_MORE_NORD_NETO for *pinto );  SD_STATE_NORD_NETO for *pinto );  SD_STATE_NORD_NETO for *pinto );  void SD_ENTRYPI SDState_SetTransition( SD_VOC hVoc,  SD_STATE histate,  SD_TRANSITION trans );
30	STRUCT ADAPTIM PARAMETERS	""		void SD_ENTRYPT SOWORD_Adapt( SD_VOC int const for its	222	"	int32 weight; int16 tolerance; ); void SD_ENTRYPT SDNord_Train( SD_VOC int int int int int int	Signic Isanu pagameres	And an Emilia and Creating	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	SD STATE SD_ENTRYPT SO MENDING TO SO STATE SPECK bool SD_ENTRYPT SDSIM
35	ETERS ) ( Page 3 of 5	From ADPILMID.C	TRAIN PARAMETERS TRAIN STATUS SO_REJCODE	rd_Adapt( SD VOC int const char int so utt	From ADPINAD.C	SD UTT TRÄIN PARAMETERS TRAIN STATUS SD_REJCODE	rd Traint SD WOC int comet char	From TRAIN.C	Commit Char far commit Char far commit Char far 50 UT ENTRY far RECOG_PLANETERS far RECOG_STATUS far	From LEARN.C	StHoch_GetEurrentState( Paraceur will contain  ch_Paracess STATE_MACH  SS_MORD_EPEC  UNIT mords,  void *pharaces  aize_t *plParaces.
<b>15</b>			far "pher, far "pfathus, far "pflejCodes );	hvoc, natorda, far "pitame, nator,		(ar "pütt", far "ppät", far "ppä jeodes );	hvoc. naords, far episase,		necd, ndords, for please, hult, hult, ser pleasuits, ser pleasuits, ser pleasuits, for pleasuits, for pleasuits, ser pleasuits		SD_SIATE_NACHINE himsech ); rWords O-terminated arrays NE bMachin, ar "pWordSpece, ar "picodSpece, e);
<b>50</b>	æ.	De USI									• 5

			·		<del></del>			
5	SINUCL RECOGN STATUS SD REJCCOR Feel Code in [16 confidence; int 16 ochoices; uns 16 best Score; );	bool SD_ENTRYP	*/ /* from im.c: void SD ENTRYP SD_CORTENT f	_ • ~	int SD_ENIRYPI typedef void (	int SD_ENIRYPI	int SD_ENTRYPT	int 32 int 32 SD_COMIENT for ); vold SD_ENTRYPT SD
10	\$ ( " SDAP11	bool SD_ENTRYPT SOLm_Reorder(int nStates SD STATE SP INT ACHOICE AECOC RESUL SD COMPET INT ACHOICE AECOC RESUL SD_COMPEN SD_COMPEN SD_COMPEN SD_COMPEN SD_COMPEN THE RECOC STATUS	<ul> <li>/* from in.c; */ /* from in.c; */ void SD EHRIPT SDIm_score(SD_VOC hVoc_int32 ray void SD_CORIENT inr *pContent, unat6 far *pscoree);</li> </ul>	etfuncCallBack(	int SD_ENIRYPT SDGetfuncHame( int funcid, char far "plame, char far "plame, char far "plame, size_t law");  typedef void ( SD_EALLBACK *SDAPI fBME CALLBACK )  typedef void ( SD_EALLBACK *SDAPI fBME CALLBACK )	// From GTUNCIO.C // // SD_ENIRYPI SDGetfuncid( comet char far	spealbrivert int funcid, void far "parga, size I (Arga, int Terra );	longlerafel shortlerafe pContext; Word_Adapitm( from CALLD
15	of top choice IMM.H 7-22-95 2:00p	int mitates, sp sinte set of the	ords,	₽. ŽŽ	int funcid, char far "phame, size_t lab"; size_t long size_t far size_t r far "pileme );	acid, iar "parga, ikros, ira );	levance; levance; SD VOC hvoc, SD WOED hlord ADADILIM_PARAMETERS for *pPor ADADILIM_PARAMETERS.	
20		s. Mesuitel,    	SD_WNAD for "pwords,	Entryfunc, Existunc);	fer *pargs );			°pPar );
25				•		•		
30	void SD_ENIRYPI SDState_GerExtendedinfo( SD VDC hVoc. SD_SIAIE hState SD_SIAIE_EXTENDED_INFO for *pinfo ); int SD_ENIRYPI SDState_PhorMercog( SD_VDC hVoc, SD_UIT hurt, Page 4 of 5	STRUCE SO VOC EXIENDED, LHFO ) (	size t SD_ENIRYPI SDUIT_Get( SD_UIT NUT; void dar "Sot; size t SD_ENIRYPI SDUIT_Get( SD_UIT NUT; void dar "sbut; void dar "sbut; size t (Buf );	void SO_ENTRYPT SOM	size_t SD_ENTRYPI SDword_GetPronunciation( SD_VOC hVoc, SD_VOC hVoc, SD_VOC hVoc, unipped char for 'pduf, unipped char for 'pduf, size_t (Buf );  uns32 SD_ENTRYPI SDword_CettmlCount( SD_VOC hVoc, SD_VOC hVoc);	uint SD_ENIRTPT SONOrd_ListIds( SD_WCC hvoc, SD_WCD hvord, SD_WCD far *pBuf, wn32 nBuf );	int SD_EWIRTPI SDState_Recogs(	// has to agree with RECOG PARAMETERS STRUC( RECOGN PARAMETERS ) <pre>int16 matchoices; int16 cepitresh; int16 dist1hresh; int16 computation; sp_comtext; char far *prefix; sp_uppd far *ppass1hru; uni16 r@ass1hru; );</pre>
35	late_GetExtendedInfo( Nte_PhorRecog( SD_VOC SD_UIT Page 6	SED_HIFO ) ( /* current number /* current number ox_GetExtendedInfo( SUBED_HIFO ) { /* current number	SDUIT GET( SD UTF NUTE  SDUIT GETI ( SD UTF NUTE  SDUIT GETI ( SD UTF NUTE  VOID far *  VOID ( ST UTF NUTE	SO_ENTRYPT SONOrd_Settm1Count( SD_VOC hVoc., SD_WORD hVord, SD_WORD hVord, write information to the count of the count of the count ( SD_T) and the count ( SD_T).	SD_ENTRYPI SDword_GetPronunciation( SD_VOC.) SD_winippes unitable size_ti SD_ENTRYPI SDword_GettmlCount( SD_VOC. hvoc., SD_WORD hvord_SD_VOC. hvord	ord_listlids( sp_vox sp_vox sp_vox sp_vox sp_vox	RECOGN SD VOC SD STAN SD UIT STAN STAN STAN STAN STAN STAN STAN STA	h RECOG PARAMETERS ETERS ) {  is  is  pon; pcontext;  is  is  is  is  in  in  in  in  in  in
40	sedinfo( SD VOC hVoc. SD STATE EXTENS SD STATE_EXTENS SD VOC hVoc. SD UTT Nutt, Page 4 of 5	in the	epour,	( SD_VDC hvoc. SD_WDRD hvord, SD_WDRD hvord, ); ivithRecent( SD_VDC h SD_WDRD i	tion( SD_VOC hvoc, SD_VORD hvor, unsigned cha size_t lBuf D_VOC hvoc, D_VOC hvoc,	Theore, to hear of the part of	SD VOC NVOC. SD SIAME State, SD SIAME State, SD SIAME STATE SD SIAME STATE RECOGN PARAMETERS (ar "p RECOGN PARAMETERS (ar "p RECOGN SIAMES (ar "p RECOGN SIA	
45	SED_lato far *pinfo	e vocabulery */ Ids */ EMDED_LNFO for *pinfo );		VOC NVOC, VOC NVOC,	d, in fer 'pBuf, );		far *pResults, far *pPar, *pRecStalus );	
50			• · · · · <del>· · · · · · · · · · · · · · ·</del>	<del></del>				

5 10	50,40   1 HH.; N - 7 - 22 - 95			•	) /º extern "C" */  #endil /º _SDAPIINH_H_ */	#idef_cplusplus	// Categorizes the list of words in a given position // (abus points to a contiguous 2-0 array of chars)	// Calls the score decay for the (Madjustments that ordinarily happens only // during the load/save cycle. (GRC, 1SEP93) void SD_ENTRIPT SDLm_DecayAdjust( SD_VOC hVoc );	RECOC PARAME RECOC STATUS SD WORD *PIT inits nirana	accoc result
20	5 2:00p						smittion (GRG, 1SEP93)	); that ordinarily happens only	RECOG PARAMETERS far "pPer, RECOG STATUS far "pRecStatus, SD WORD "pTranscription, int16 nTranscription );	AECOG RESULT ENTRY for "presults, size i incoults,
30	۵	. <u>.</u>	<u> </u>	 	<del></del>		 _			-
35										
10	Page 5 of 5				*	: :		· · : ·	. * ·	
<b>4</b> 5										
50	Merv	••					 			<del></del>

Added SUAMG_State_Copyrrom.  Rev 1.42 27 Jan 1994 19:24:36 BETSY  Driver Version 4.13:10  Macintosh Changes - Really IAM - Buddy = DEAN = GREG  Macintosh - removed unvecessary mac specific definitions.  Rev 1.41 16 Jan 1994 17:32:38 JED  SOAPIN.N 7-22-95 2:09p  20 25	Version 4.13.25 - first version under ILIB!  1.45 - 21 Feb 1994 09:37:44 JED  version 4.13.15  SDARG_Word_Heakkodel and SDARG_Word_StateRefCount.  1.44 - 04 Feb 1994 17:13:02 BE15Y  Version 4.13.13  order of SDARG_Word_BuildFrom  Jed.  1.43 - 31 Jan 1994 18:39:20 JED  version 4.13.11	Revision 3 on Thu Apr 07 18:44:37 1994 by JED Driver version 4, 13.35 Added MAP 5D BUFFER macro. Added SDARG Voc GetVeight & SDARG voc SetVeight. Added SDARG Lan Reorder. Added SDARG Lan Reorder. Added SDARG State Reorg? Int -> Int 18 site t -> uns16 Revision 2 on Wed Mar 30 18:55:55 1994 by DEAN Brown this file contains All SDARG structures, inhouse or not. Added conditional includes of sdapi-h and sdapirth.h. Revision 1 on Thu Mar 17 13:20:16 1994 by DEAN Revision 1 on Thu Mar 17 13:20:16 1994 by DEAN	Sheader: f:/work/newd/inc/vcs/sdspix.h_v 1.45 21 feb 1994 09:37:44 JE v 8 % p 8 % p 8 % p 8 % p 8 % p 8 % p 8 % p 9 % p 1
30 Or iver v.	Oriver Versi Added SDARG Rev 1.29 Oriver Versi Red fined in Rev 50AR Driver versi added SDAR SDARG_Utt. Rev 1.27 Oriver versi	Rev 1.34 2 Driver Version Added args to SDUI_Compare. Rev 1.33 2 Driver Version Rev 1.31 2 Oriver version Added manufords	Driver vers Added SDAR Rev 1.30 Driver vers Added SDAR Rev 1.39 Driver vers Added SDAR Rev 1.38 Driver vers Added SDAR Added SDAR Added SDAR Added SDAR Added SDAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR Added SPAR
Added support for small model compiles of by using _fatrlen instead of strien in a: Rev 1.26 13 May 1993 19:28:48 JEO river Version 4.11.22 Added useflesiModeCallbacks argument to 50/2 Rev 1.25 06 May 1993 12:15:18 BORIS river Version 4.11.08 Page 1 of 15	on 4.11.3 Voc_Gatti on 4.11.3 the staut i on 4.11.3 on 4.11.2 on 4.11.2 on 4.11.2	Rev 1.34 28 Jul 1993 12:03:16 BETSY Oriver Version 4.11.93 12:03:16 BETSY Added args to SDUTT_GetLabel, SDUTT_SetLat SDUTT_Compare.  Rev 1.33 23 Jun 1993 12:02:28 BETSY Driver Version 4.11.64  Rev 1.32 09 Jun 1993 14:53:14 BETSY Oriver Version 4.11.52  Rev 1.31 20 May 1993 07:10:16 JOELG Oriver Version 4.11.99 Added manifords and minimized to the SDARG_3 Rev 1.30 19 May 1993 16:00:06 JED	version 4.13.4  SDARG_Word_tistMatchesByfrequency.  1.40 13 Jan 1994 12:08:00 BETSY  Version 4.13.3  SDARG_State_IterateSpecifiedWords and SDARG_State  1.39 01 Sep 1993 20:06:16 DEAM  version 4.11.131  SDARG_Lan_DecayAdjust and SDARG_Lan_GetCats (GRG)  1.38 31 Aug 1993 11:19:08 DEAM  Version 4.11.127 (GRG's Lenguage model stuff)  SDARG_Voc_SetLaType1 (GRG)  1.37 23 Aug 1993 17:42:22 FRANKH  Version 4.10.34  SDARG_Word_BuildFrom  1.36 16 Aug 1993 21:17:36 BETSY  Version 4.11.103  1.37 13 Aug 1993 13:27:50 BETSY  Version 4.11.103  1.15 104 1993 13:27:50 BETSY  Version 4.11.103  1.15 104 11:103  1.15 105 INPUT_FILESPEG.
bel compiled to strien bi28:48 argument b:15:18	2 2 2	2:03:16 et, SOUTT, 2:02:28 2:02:28 4:53:14 7:10:16 4:00:06	esByFreque 2:08:00 2:08:00 becifiedM 3:06:16 and 50AR 11:19:08 and 50AR 11:19:08 (GRG) 7:42:22 7:42:22 7:42:22
in a macro is necessary.  JED  to SDARG_Task_Hew.  BORIS  1 of 15	· · · · · · · · · · · · · · · · · · ·	BETSY  BETSY  BETSY  BETSY  SDARG_State_ContRecogl block.  JED	BETSY  BETSY  BETSY  OFAN  DEAN  G_(m_GetCate (GRG)  DEAN  PRANCH  BETSY  BETSY
50	anTables.	loct.	tspecifiedwords.

	• Rev 1.10 05 Aug 1992 19:14:10 JOSHUA • Driver version 4.01.30 • Shapen at 7.73.08 3.00	Priver Version 4.01,38 1992 12:25:04 JED No longer require std.h.	. Rev 1.12 23 Aug 1992 16:49:30 JED	• Rev 1.13 04 Sep 1992 13:36:24 JOSHUA • Driver vereion 4.02:12	of subset error GetWeenage so that we can distinguish between root and task functions and return the correct error message.	• Rev 1.14 11 Sep 1992 12:41:18 JED • Oriver Version 4.03.10 Added SDARG_Error_GetMessisge2 which adds himsh, funcid and errorCode	Driver Version 4.03.11 Added SDAMG_Voc_SetLmType.	Priver Version 4.03.15  Added args for \$Dault and spectuarchbog.		Rev 1.17 21 Sep 1992 16:35:06 JED	Priver Version, DA. 24  Oriver Version, DA. 24  Added SDVoc GetExtendedinfo & SDState GetExtendedinfo	1.19 17 Jan 1993 11:33:42 Version 4.10.24 - 32-bit clear	* Driver version 4,10,34 Added SDUser_PoteteWord.	Added transcription persenters to Contracog	Rev 1.21 24 Feb 1993 15:18:20 JUSHUA     Driver version 4.10.36     Phonese recognizer and sinor bus files.	Driver Version 4.10.39  32-bit bug fix: int -> int16 in argument blocks		Phone records 4.0.42	* Oriver Version 4.10,61 - new SD BUFFER SPEC New buffer spec (SD BUFFER SPECZ) - uze with SDARG TYPE = 2. New function id SDID_GET_MAX_SDARG_TYPE.	Added new function blocks for the functions added in the toolkit, including SDPar_iterate, SDState_ContRecogl.
Page 2 of 15	#indir struc #define Struc(x) typedef struct x a; struct x /* structures defined using this macro can be referred to	Bendif Bendif	#define Extern ecu	Bifndet EXTERN Bifdet cplusplus	Bitndef PUBLIC  Bedrine PUBLIC  Bendit	#include "edapiinfi.h" #endif	#include "sdapt.h"	difnet SDAPIX N	•/	Rev 1.0 25 Mar 1992 20:03:50 JED	• Rev 1.1 09 Apr 1992 09:27:06 JED	Rev 1.2 06 May 1992 17:50:26 JED  Version 4.00.9  Cosmett name changes of SDARG_ structs.  Added SDChannel_GetStatus.	• Rev 1.3 06 Jul 1992 18:23:24 JED • Driver Version 4.01.6	Dev 1.4 10 Jul 1992 15:53:38 JED Dever Version 4.01.7 Added SDARG State Getinfo. Adden SDARG State Getinfo.	11 Jul 1992 14:55:26 tion 4.01.9	<ul> <li>Rev 1.6 16 Jul 1992 16:35:10 JOEL</li> <li>Modified to support addition of SDGetfuncHame and func Callbacks in func.cpp</li> </ul>	• Rev 1.7 16 Jul 1992 16:56:58 JOEL • Minor fixes to SDAPI Entry and Exit callback defs	ion 4.01.14 G. Word_Lookup, SDARG_Word	1.9 26 Jul 1992 15:09:44 Version 4.01.18 1.8 20 Jul 1992 12:07:36	Added SIRUC declaration and re-declared SDARG State Recog with it. (This is needed so that csr.h doesn't have to include adapts.h)

```
typedef SD_BUFFER_SPEC2 SD_BUFFER_SPEC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // 010 SPEC: typedef struct SD_BUFFER_SPECT (
                                                                                                                                                                                                                                                                                                                                               fdefine setup so imput status(_b,_p) \
    setup_sb_twpt_buffer(_b,_p,(_p) ? strten(_p)+1 : 0)
feruif
                                                                                                                                                                                                                                                                                                                                                                                                             #define SETUP_SD_THPUT_FITESPEC(_b,_p) \
SETUP_SD_THPUT_BUFFER(_b,_p,{_p}) T FiteSpec_GetSize(_p)+1 : 0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /* if buffer is filled with data, you can use SETUP_SO_IBUFFERX */
#define SETUP_SO_IMPUT_BUFFER(_b, p, 1) \
(_b).pBuf.p = (void far *)(_p); \
(_b).rDatabytes * (_b).tBuf * _(;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #define SEIUP_SD BUIFER( b, p, i, n) \
( b).pBuf.p = (void far *)?_pJ; \
( b).fbuf = [; (b).fbuf = [; (b).fbuf = [; (b).fbuf = []; (c).fbuf = [];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uni32 lBut;
uni32 mbataBytes;
) so_Buffer_spec2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedaf struct SD_BUFFER_SPEC2 (
union (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /° define the current argument structure type °/
extern unsigned int SDARG_TYPE; /° app-side global variable in INIT.C °/
#define MAN_SDARG_TYPE 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                udefine setup so quiput Butter(_b,_p,_t) setup so Butter(_b,_p,_t,0) getine setup so guiter(_b,_p,_t) setup so [undi_Butter(_b,_p,_t)]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                //#include "filespec.h"
                                                                                                                                                                                                                                                                                       /* macro to pull the pointer out of a buffer spec */
#define MAP_SO_BUFFER(T,b) ((T *)((b).pBuf.p))
                                                                                                                                                                                            /* p must be a SD_CONTEXT * for the following two macros */
#define SD_CONTEXT_LEN(_p) \
((_p) ? sizeof((_p)->nContext) * (_p)->nContext * sizeof((_p)->context(0)) : 0)
#define SETUP_SD_CONTEXT(_b,_p) SETUP_SD_INPUT_BUTFER(_b,_p,SD_CONTEXT_LEN(_p))
                                                                                                                    /* Predefined function IDs: */
#define SDID_GET_MAN_SDARG_TYPE (Oxfffd)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void far *p;
uns32 absadrs;
) p836;
uns32 ibu/;
sD Buffer spec1;
/ NEW spec:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void far "p;
uns32 absadrs;
) pBuf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Structure used to define a buffer of info to be passed to the speech driver */
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       without the 'struct' qualifier
  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /* # of bytes of data in buffer */
                                                                                                    SDAPIN.N 7-22-95
    15
20
    25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef struct (
SDARG HEADER h;
intlo Funcid;
unsio ret;
SD BUFFER SPEC pHame;
) SDARG GetFuncHame;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                typedef struct (
SDARG MEADER h;
intlo ret;
sD BUFFER SPEC PHOME;
SDARG GerFuncld;
                                                                                                                                                                          typedef struct (
SDARG HEADER h;
SD 1ASK ret;
SD BUFFER SEEC pHame;
) SDARF Task Rew Obsolete;
                                                                                                                                                                                                                                                                                         typedef struct (
SDARG_NEADER h;
SDARG_UTT_Cancel;
                                                                                                                                                                                                                                                                                                                                                                                                   long A5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        typedef struct (
SDARG WEADER h;
Unsid=ret;
SD LASK hlask;
intl6 funcid;
intl6 funcid;
intl6 errorCode;
SD BUFFER_SPEC pBuf;
SDARG_Error_GetMessuge2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          typedef struct (
SDARG HEADER h;
unal6-re;
SD BUFFER SPEC pBuf;
SD BUFFER SPEC pBuf;
SDARG_Error_GetMessage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef struct (
SDARG_MEADER h;
uns16_ret;
SD_BUFFFR_SPEC_pBUf;
SDARC_Api_GetVersion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uns16 type;
uns16 OffsetToPtrs; /
uns16 nPtrArgs;
> SDARG_NEADER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #define SD_MAX_MPTRARGS
                                                                                                                                                                                                                                                                                                                                                                   void ($D CALLBACK *pfunc)(void);
) SDARG_Utt_SetMatchDog;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedef struct (
SDARG HEADER h;
void (SD CALLBACK *ret)(void);
sifndef MAC[NIOSH_
                                                                                                                              SDARG_MEADER h;
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 una 18 da;
      35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      offset
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from start of
                                                                                                      Page 3 of 15
        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 max # of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      arg block (incl. arg header)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ptr args to any driver
          45
            50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
```

```
typedef struct (
SDARG MEMBEL ret;
SD CHANNEL ret;
SD BUFFER SDEC pfileName;
SD BUFFER SPEC pMode;
) SDARG Charrel MewFile;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  typedef struct (
SDARG MEADER h;
SD IASK ret;
SD BUFFR SPEC phame;
SDARG Task_GetHandle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                typedef struct (
SDARG HEADER h;
SD BUFFER SPEC piter;
SDARG_Task_Iterate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef struct (
SDARG READER h;
SD 145K hlask;
SDARG lask_Close;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   typedef struct (
SDARG HEADER h;
SD TASK htmsk;
unsi6 ret;
SD BUFFER SPEC pBuf;
SDARG lask_GetName;
                                                                                                                                                    typedef struct (
SDARG HEADER h;
SD CHÄMBEL hChan;
SD UIT hUtt;
) SDARG Charmel Urite;
                                                                                                                                                                                                                                typedef struct (
SDAIG MEADER h;
SD UTT ret;
SD CMANNEL hChan;
intle readiode;
) SDAEG_Channel_Read;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               typedef struct (
SDARG WEADER h;
SD TASK ret;
SD BUTTER SPEC piter;
                                                                                                                                                                                                                                                                                                                               typedef struct (
SDARG HEADER h;
SD CHANNEL hChan;
) SDARG_Channel_Close;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SD_TASK_ret;
un316 useRealHndeCallbacks;
SD_BUFFER_SPEC_pMame;
SDARC_fash_Rew;
 10
                                                                                            SDAPIN.N 7-22-95 2:09p
 15
20
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      typedef struct (
SDARG MEADER h;
SD BUFFER SPEC piter;
SDARG_Channel_iterate;
                                                                                                                                                                  typedef struct (
SDARG MEADER h;
SD CHANNEL hthan;
) SDARG Channel Release;
                                                                                                                                                                                                                                                                                                                                    SD_BUFFER_SPEC_pouf;
SDANG_Charrel_GetDeviceAddress;
                                                                                                                                                                                                                                                                                                                                                                               typedef struct (
SDARG_MEADER h;
uns16 ret;
                                                                                                                                                                                                                                     SD CHANNEL hChan;
intl6 seize;
) SDARG_Channel_Claim;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedef struct (
SDARG_MEADER h;
uns16 ret;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              spedef struct (
  30
                                                                                                                                                                                                                                                                                 typedef struct (
SDARG HEADER h;
int16 ret;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOARG_Channel_Settength;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int32 ret;
SD_CHANKEL hChan;
int32 mUlt;
                                                                                                               SDARG HEADER h;
SD_CHANNEL hChan;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD_BUFFER_SPEC piter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CMANNEL hChan;
BUJFER SPEC pBuf;
G_Charmel_GetDeviceName;
     40
     45
     50
        55
```

```
typedef struct (
SDARG MEADER h;
intid ret;
SD CHANNEL hChan;
SDARE_Channel_IMicOn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef struct (
SOARD READER h;
int16 ret;
50 CHANNEL hChan;
50 CHANNEL ishicSuitchOn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef struct (
SDARC HEADER h;
int16 ret;
SD CHAWEL hChan;
SDARE_Charnel_Isclaimed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      typedef struct (
SDAG MEADER h;
intl6 ret;
SD CHARNEL hChan;
SD CHARNEL hChan;
) SDAGC_Charnel_SetRicOff;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   typedef struct (
SOARG HEADER h;
SO_CHAWAEL htthen;
SO_BUFFER SPEC pinfo;
SOARG_Charnel_GetInfo;
)
                                                                                                                                                                                                                   void (SD_CALLBACK *pmandler)(SD_CHANNEL, SD_CHANNEL_EVENT);
) SDARG_Charmel_SetEventHandler;
                                                                                                                                                                                                                                                                                                                                                                                                                                     typedef struct (
SDARG_MEADER h;
int16 ret;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SDARG_Channel_GetInfo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int16 purge;
int16 micSwitch;
SDARG_Charmel_SetMicOn;
                                                                                                                                                                                           pedel struct (
                                                                                                                                                                                                                                                                                                                                                                                                    SDARG_Channel_InSpeechAvailable;
    5
                                                                                                                                                        SO UTT HULL;
                                                                                                                                                                                                                                                                                                  intid event;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDARG_HEADER h;
int16 ret;
SD_CHANNEL hChan;
                                                                                                                                                                                                                                                                                                                                 SDARG NEADER h;
SD_CHANNEL hChan;
SD_CHANNEL hChan;
                                                                                                                                                                                                                                                                                         15 6 da
                                                                                                                                                                                                                                                            iong AS;
                                                                                                                                    JULI COLLECT;
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                                                                                                  SDAP1X.H 7-22-95 2:09p
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                                                                                                                                                                                                                                                                                                                                                                                   typedef struct (
SDARG HEADER h;
SD USER ret;
SD BUIFER SPEC pfileName;
SDARE User_Open;
                                                                                                                                                                                                                                             typedef struct (
SDARG HEADER h;
SD USER NUSer;
) SDARE_User_Save;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   typedef struct {
    spec weather h;
    sp uif huit;
    sp uif huit;
    sp usfer_spec puttlabel;
} spame_uit_setlabel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  typedef struct (
SDARG MEADER h;
um32 ret;
SD UIT NUTT;
SD SD SBAFFER SPEC pouf;
SD SDARG UIT Gettabet;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    typedef struct (
SDARG HELDER h;
SD UTT ret;
SD BUTTER SPEC piter;
) SDARG_UTT_MENT;
                                                                                                                                                                                                                                                                                                                typedef struct (
SDARG MEADER h;
SD USER ret;
) SDARE_User_Mew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    typedef struct (
SDANG NEADER h;
uns32 ret;
so uit hutt1;
so uit hutt2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      typedef struct (
SDARG HEADER h;
SD BUFFER SPEC piter;
) SDARG_Utt_iterate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            typedef struct (
SDARG HEADER h;
SD UTT NUTT;
) SDARG_UTT_Delete;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               typedef struct (
soarc HEADER h;
SD U17 hutt;
SD BUFFER SPEC pinfo;
) SDARG_Utt_Getinfo;
30
                                                                                                                                                                       typedef struct (
SDARG HEADER h;
SD USER hUser;
SD_BUFFER_SPEC pfileHame;
                                                                                                                   SDARG_HEADER h;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDARG_ULL_Compare;
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                                                                                                 Page 5 of 15
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```
typedef struct (
SDARG HEADER h;
SD VOC hVOC;
SD LM TYPE (m) YPE;
) SDARG_VÖC_SEILMI YPE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedef struct (
SOARG HEADER h;
SO VOC NOC;
SO UNIFER SPEC pRume;
SO BUFFER SPEC pRume;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uns16 ret;
SD_VOC hVOC;
SD_BUFFER_SPEC_pBuf;
SDARC_VOC_GetFileName;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SDARG HEADER h;
SD VOC hVoc;
SD BUFFER SPEC pweufileSpec;
SDARG_VOC_HOTIFYFILERCHME;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            typedef struct (
SDARG HEADER h;
SD BUFFER SPEC pressitable;
SD BUFFER SPEC pressitable;
SDARG Voc_GetCollationTables;
                                                                                                                                                                                                                                                                                                                                         typedef struct (
SDARG_MEADER h;
) SDARG_Ref_Save;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                typedef struct (
SDARG HEADER h;
SD VOC hVoc;
SD BUFFER SPEC piter;
SDARG_Voc_IlerateEnv;
                                                                                                                                                                                   typedef struct (
SDARG HEADER h;
SD YOC hVoc;
SD WARD hWord;
SDARG Word Save;
                                                                                                                                                                                                                                                                                                                                                                                       typedef struct (
SDARG_MEADER h;
) SDARG_Ref_Load;
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SDARG_VOC_SetEnv;
                                                                                                                                                                                                                                                        SDARG Word New
                                                                                                                                                                                                                                                                     BUFFER SPEC plane;
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```

```
typedef struct (
SDARG MEADER h;
ums16 ret;
SD vOC hVoc;
SD uns0 hvord;
SD gufffe
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                                                                                                                                        rceVocs;
                                                          SDAPIN.N 7-22-95 2:09p
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 25
                                                                                                                                                                                                                                                                                                                                          typedef struct (
SDARG HEADER h;
intl6 ret;
SD VOC hVoc;
SD UDBn --:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      typedef struct (
SDAGE (READER h;
SD WORD ret;
SD VCC NVOC;
SD BUFFER SPEC piter;
SDARG_Word_Iterate;
                                                                                                                                                                                                                                                                                                                                                                                             ypedef struct (
SDARG MEADER h;
SD WORD ret;
SD BUFFER SPEC p
) SDARG WORD MEXI;
 30
                                                                                                                                                                                                                                                                                                                                  SDARG_WORD hWord;
SDARG_Word_HasModel;
                                                                                                                                                                                                                                                                                                                                                                                                          SPEC piter;
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```

```
typedef struct (
SDARC MEADER h;
SDARC WOC hVoc;
SD WARD hVord;
SD BUFFER SPEC pPron;
SDARE_Vocid_SetPronunciation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     typedef struct (
SDARC_HEADER h;
uns16 ret;
SD_VOC hVoc;
SD_WORD hNord;
SD_BUFFER SPEC p8uf;
SD_BUFFER SPEC p8uf;
SDARE_VOCID_GetPronunciation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     typedef arruct (

SDARG HEADER h;

SD YOE NAVOC;

SD UNER NAVOC;

SD BUFFER SPEC DATT;

SO BUFFER SPEC par;

SO BUFFER SPEC par;

SO BUFFER SPEC par;

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SO BUFFER SPEC par;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SDARG HEADER h;
SD VOC hVoc;
SD_STATE hState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     typedef struct (
SDARG HEADER h;
SD STATE ret;
SD YOC hvoc;
SD YOC hvoc;
SD STATE hparent;
SD SDARE State_wew;
                                                                                                                                                                                                                                                                                                                                                               SDARG HEADER h;
SDARG HEADER h;
SD YOC hVoc;
SD STATE hState;
) SDARE State Save;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        typedef struct (
SDARG HEADER h;
SD YDC hVoc;
SD STATE hState;
SDARG_State_Delete;
                                                                                                                                                                                                                   spedet struct (
SDARG HEADER h;
SD VOC hVoc;
SD STATE hState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int16 caseSensitive;
BiIndel MACINIOSH
uns18 ds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        uns 3? (5D CALLBACK *(Break)(void);

SD_BUFFER SPEC pBul;

SD_BUFFER SPEC prelix;

SDARC_Word_[istMatchesByFrequency;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SDARG_State_Load;
   10
                                                                                                                                                                                   SDAPIN.N 7-22-95 2:09p
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                                                                                                                                                                                                                                                                                                                                  typodef atruct (
SDARG NEADER h;
SD VOC hVoc;
SD STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              typedef struct (
SDARG MEADER h;
SD YOC hVoc;
SD STATE histore;
SD SUFFER SPEC pinfo;
SDAPC State_GatExtendedinfo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedef struct (
SDARG HEADER h;
SD YOC NYOC;
SD STATE hState;
SD BUFFER SPEC pinfo;
SDARG State Gatinfo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     typeded struct (
SOURG HEADER h;
SO SIME ret;
SD SIME ret;
SD SIME RET;
SD SHATE hParent;
SD BUFFER SPEC pStateWame;
SDARG_State_GetHandle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            typedef struct (
SDARG MEADER h;
SD VOC hVoc;
SD SIAIE hState;
SD BUFFER SPEC pStateMame;
SDARG State_Settmame;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SD_STATE hState;
SDARG_State_GetTransition;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SDARG_State_Unioad;
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uns16 copyChildren;
uns16 renameTarget;
SD_BUFFER_SPEC_newHame;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OC hVocSource;
STATE hStateSource;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hParent larget;
   35
                                                                                                                                                                            Page 9 of 15
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```

```
typedef struct (
SDARG HEADER h;
SDARG HEADER h;
SD STATE hEster;
SD LORD hHord;
SDARG State Addword;
                                                                                                                                                                                                                                                                                                                                                                                                     typedel struct (
SDARG MEADER h;
SD VOC hVoc;
SD SIAIE AState;
SD LUGED hWord;
SD LUGED hWord;
SDARG State DeleteMord;
                                                                                                                                                                                                                                                                                                                                                          sparg MEADER h;
int16 ret;
                                                                                                                                                                                    State SetWordActive;
10
                                                                                             SDAPIN.II 7-22-95 2:09p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SDARG HEADER h;
SD TRÄMSITION ret;
SD YOC NYOC;
SD STATE histore;
SD STATE histore;
SD WORD NHORD;
SDARG State GetWordfransition;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDANG_State_GetWordInfo;
                                                                                                                                                                                                                                                                                                       typedef struct (
spars_meants h;
uns2 ret;
sp_guffen spec pauf;
sp_guffen spec pler;
sp_guffen spec pler;
sp_guffen spec pler;
sp_guffen spec pler;
sp_guffen spec pler;
               30
                                                                                                                                                                                                                                                                                                                                                                                                    D STATE hState;
D WORD hWord;
SD BUFFER SPEC piter;
NB State iteratewordEnv;
                                                                                                                                                                                                                    DARC MEADER h;
DARC HVOC;
D'STATE hState;
D'BUFFER SPEC piter;
UE State iteratebords;
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                                 55
```

```
typedef struct (
sparc reader h;
sp you hvoc;
sp state
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Inii6 order;
SDARG_State_SetWordDrder;
                                                                                                                                                                                                        SDARG_State_SetWordIndex;
                                                                                                         5
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                                                               SDAPIN.N 7-22-95 2:09p
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                                                                                                                                                                                                      typedef struct (
SSARG MADER h;
SO VC NVC;
SO SIATE AState;
SO SUFFER SPEC plane;
SO BUFFER SPEC plane;
SO BUFFER SPEC plane;
SO SDARG State_SetStateEnv;
                                                                                                                                                                                                                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                         SD_STATE hstate;
SD_STATE hsubstate;
SD_TRANSITION trans;
SDARE_State_SetStateTransition;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SDARG_State_AddState;
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                                                               1 0
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```

```
typede( struct (
SDARG MEADER h;
SD VOC hvoc;
SD-SLAIRE hStere;
SD-BUFFER SPEC Piter;
) SDARG_State_iterateStates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      iypedef struct (
SDARG HEADER h;
SD STATE ret;
SD YOC NYOC;
SD STATE hState;
SD SDAPC_State_GetParent;
) SDAPC_State_GetParent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRUC(SDARG State Recoo) (
SDARG MEADER fi;
SDARG MEADER fi;
SD STATE history;
SD STATE history;
SD BUFFER SPEC pharity;
SD BUFFER SPEC pharity;
SD BUFFER SPEC pharity;
SD BUFFER SPEC pharity;
SD BUFFER SPEC pharity;
SD BUFFER SPEC pharity;
SD BUFFER SPEC pharity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              typedef struct (
SDARG HEADER h;
SD STATE ret;
SD BUFFER SPEC piter;
SDARG State_HentState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typedef struct (
SDARG HEADER h;
SD OR HVOC;
SD STATE hState;
SD STATE hParent;
) SDARG State SetParent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         State Recog2) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MACHINE hStHach;
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                                                                                                                                                                                                                       SDAPIK.N 7-22-95 2:09p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRUC(SDARG ContRecog1) (
SDARG HEADER h;
uns32 ret;
SD voc Nocc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRUC(SDARG ContrecogPartial) (
SDARG MEADER h;
SD_BUFFER_SPEC paesults;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                typedef struct (
SDARG HEADER h;
SUNSIGNET;
SD BUFFER SPEC PHOME;
) SDARG Per_GetHandle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               typedef struct (
SDARG_MEADER h;
uns16_ret;
) SDARG_Par_GetNumPar;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   typedef struct (
SDARG_MEADER h;
intld ret;
unal6 hPer;
unal6 hPer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SD_SIATE hState;
SD_BUFFER SPEC piter;
SDARE_State_IterateChildren;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 128 GS 12
                              30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SDARG Par GetHame;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int16 mindords;
int16 maxwords;
to BuffeR SPEC pResults;
to BuffeR SPEC pRestatus;
to BuffeR SPEC pContext;
to BuffeR SPEC prefix;
to BuffeR SPEC pfranscription;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SDARG MEADER h;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD BUFFER SPEC pBuf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         all ranscription;
                                     35
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                                                          45
                                                                50
```

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SO_BUFFER SPEC piter;
) SDARG_Par_Iterate;
                                                                                                         SDARG MEADER h;
SD VOC NVOC;
SD VOC NVOC;
SDARG_VOCPOOl_New;
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                                                         SDAPJK.N 7-22-95 2:09p
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 25
                                                                                                                                                              typedef struct (
SDARG HEADER h;
SD_STATE_MACHINE machine;
 30
                                                                                                                                                                                                                                                                     int32 cnt;
SDARG_VocPool_SetLockCnt;
                                                                                                                                                                                                                                                                                                                                    SD_WORD hWord;
SDARG_VocPool_GetLockCnt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SDARG_VocPool_Delete;
                                                                                                                                                                                                                                                                                                                                                                                                   SDARG_VocPool_UnlockId;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SD_VOC hVoc;
SDARG_VocPool_GetHextId;
                                                                                                MCHINE hMachin;
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```

```
// 2-15-93 CE! Added SIRUC(SDARG_Lm_Reorder) for right context Lm SIRUC(SDARG_Lm_Reorder) (
SDARG_READER h;
int 16 Tet;
int 16 mChoicest;
int 16 mChoicest;
int 16 mChoicest;
int 17 length of second buffer (right)
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
SD_BUFFER_SPEC_Distates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRUC( SDARG SIMACH Parte ) (
SDARG READER h;
BOOL & ret;
SD STATE MACHINE hStNach;
in 16 priords;
in 16 parte;
SD SUIFER SPEC phordSpecs;
SD BUFFER SPEC phordebuf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SDARG HEADER N:
SD VOC NVOC:
(INTEX Moords;
INTEX posPrior;
UNS16 (Bufs;
SD Buffer SPEC phords;
SD Buffer SPEC phofs;
SD Buffer SPEC phofs;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             typedef struct (
SDARG HEDER h;
SD STÄTE ret;
SD STATE MACHINE hStruch;
SDARG_STRUCH, GetCurrentState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // for inhouse call SDLm_DecayAdjust (GRG, 1SEP93)
typedef struct (
spang mEADER h;
SD voc NHOC;
SD voc NHOC;
SDARĒ_Lm_DecayAdjust;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // for inhouse call SDLm_GetCats (GRG, 15EP93)
typedef struct (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11del Windows
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              From dispetch.cpp: */
littlef NIGHC
#idef VINDOUSE H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Answer: For each word, the country state defining the word such that is a transition in a successul party of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of the country of th
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Answer: For each word, the chain of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aultiple candidate parses.
                                                                                                                                                                                                                                                                                                         export _ler _pescal SDXDispatch(int funcid,SD_tASK hlask,
void *pergs, unal6 largs);
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                                                                                                                                                                                                                                                           SDAPIK.N 7-22-95 2:09p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length of first buffer (left) length of second buffer (right)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     called/included states that led to the he transition for the word in that state
   15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a way of returning
20
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // extended recog function has extra inhouse arguments in the parameter // structure STRUCT SDARG State Recogx ) (
SDARG HTADER h;
Uns37 ret;
SD VDC hyoc;
SD STANE hState;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
SD SUFFER SPEC paerults;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRUC( SDARG Word GetPronunciation ) (
SDARG_HEADER h;
SDARG CHYC;
SD_WORD hword;
SD_WORD hword;
SD_BUffer_SPEC_pauf;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRUCY SDARG Word ListIds ) (
SOARG HEADER h;
LOTS12" ret;
SD WOC NVOC;
SD WOC NVOC;
SD WOC NVOC;
SD BUTFER_SPEC pBuf;
SD BUTFER_SPEC pBuf;
                                                                                                                                                                                                                                                                                                                                                STRUCE SDANG WORD SETTIMETOWN ) (
SDANG MEADER N;
SD_VOC NYOC;
SD_WORD INVOC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /* INHOUSE argument blocks: */
STRUC( SDARG tm Score ) (
SDARG HEADER h;
SD VOC hVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bendit /* Windows */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRUC( SDARG WORD GETLENCOUNT ) (
SDARG_MEADER N;
uns32 ret;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void sdErrorHandler(SD_TASK blask, int funcid, int errorCode);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #define SDERR_NOT_INSTALLED (-1)
#define SDERR_NOT_INIT (-2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /* from error.c:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INTIZ NHORDS;
SD_BUFFER_SPEI
SD_BUFFER_SPEI
SD_BUFFER_SPEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SD VOC NVoc;
SO WORD NWORD;
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BUFFER SPEC puords;
BUFFER SPEC puortext;
BuffER SPEC pscores;
       35
                                                                                                                                                                                                                                                               Page 16 of 15
           40
               45
           50
```

5	11.07.05				SDAPI func CALLBACK pénirfunc; SDAPI func CALLBACK pénirfunc; ) SDARG_SeifuncCellBack; Hendif /* _SDAPIX_M_ */	SD_VOID NO.; SD_VOID NO.; SD_VOID NO.; ); (typede struct ( typede MEADER h; until ret; until ret;	SD_BUFFER_SPEC_DBUF; ); SIRUC( SDARG UTL MakeRandom ) ( SDARG WELDER h;	=	SIRUC( SOARG WOR'D GETTMICOUNTWITHRECENT ) ( SOARG MEDER F; UNS\$2 ret; SD VOC Noo; SD WORD NWOR'd;	
15	\$0APIK.N 7-22-95 2:09p		*						cent ) (	
20										
25			- <b></b> -	 				_ <del></del>		
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35 40	Page 15									
45	15 of 15									· . ·
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	7	(De-1/1)								

∷ template «class I» class Stack : public OC« I » #include "ordcoll.h" Bilinder stack h /\* STACK.M\*/ /\* Copyright (c) 1995 by Dragon Systems, Inc.\*/ sendit /\* stack\_h \*/ template <class t> class PriorityQue : public OC< T > stack( int initialSize = 8, int incrementSize = 8 ) : OC< 1 >( initialSize, \*> incrementSize ) ( ) riorityque( CompareOCEntries capitunc, int initialSize = 8, int incrementSiz CompareOCEntries capfn; e = 8 )
OC< T >( InitialSize, incrementSize ) (
cmpfn = cmpfunc; 5 10 \$1ACK.# 7-22-95 2:12p 15 20 25 30 35 Page 1 of 1 40 45 50

To access this control, use the scrollbar functions as if this was a Windows scrollbar control. You can also directly send the window LMT\_USER messages. The stide control will do nothing with its window caption, so the caption need not be set. this is a stide control which is similar to a ScrottBar control control is designed to be used in the options dialog. PROJECT: Dragombictate for CREATED: February 4, 1994 AUTHOR: Joel Gould the slide control is available from the Barland resource workshop if you install the control.dll. (C) Copyright Dragon Systems, Inc. 1993-1994 All Rights Reserved. the following style bits are supported: .. DRAGON SYSTEMS CONFIDENTIAL .. slidectl.h : dragon horizontal slide control MODIFICATIONS: 10 00 1151: then query its value. this control will woll send way SROLL and was MSCROLL messages. Instead, it will send a way COMIROL message when its value changes and you must US\_VISIBLE
US\_TABSIOP
US\_DISABLED
US\_GROUP
These are the standard control styles for dialog boxes. GetScrollRange( hAnd, SB\_CTL, BrWin, BrWax )
rMin = LOUDED( SendAindowNessage( hAnd, UM\_USER+3, 0, 0L ) )
rMax = NIUDED( SendAindowNessage( hAnd, UM\_USER+3, 0, 0L ) ) SBS HORZ 5 SetScrollRange( hand, SB\_CIL, rMin, rMax, bRedraw )
SendAindowNessage( hand, LM\_USER+2, bRedraw, MAKELONG( rMin, rPos = GetScrollPost hund, S8\_CTL )
rPos = SendWindowMessage( hund, uM\_usER+1, 0, 0L ) SetScrollPost hWnd, SB CTL, nPos, bRedraw )
SendWindowNessage( hWnd, WM\_USER+O, nPos, bRedraw ) This style should always be set when the slider is used. (Actually the currently implementation does not use this bit, but I may in future.) 10 SLIDECIL.N 7-22-95 2:09p Windows -- Custom Controls 15 20 ġ ė ġ THEX ) 25 public:
// cell this routine to initialize the control class DgnSlideControl Refrine LM SETSCROLL POS LM USER+O
Refrine LM (SLTSCROLL POS LM USER+2)
Refrine LM (SLTSCROLL RANGE LM USER+2)
Refrine LM (SLTSCROLL RANGE LM USER+3) #ifndef stidect! h
#define stidect!\_h : protected: #define DGN\_SLIDECONTROL "DgnSlideControl" void libelininit( ); WIDPROC m\_myDefProc; // this utility subroutine changes the current slide position and // aterts our parent ypid Updateflash( NUND hund, int nOffset ); // this utility subroutine redraws the dotted rectangle with a new // flash position and updates the flash position int ComputePixel( NUND hund, int nOffset ); // this utility routine is the aposite of ComputeOffset int ComputeOffset( NUMO NUMO, int xPixel ); // this utility subroutine converts a pixel position into a slide // position BOOL m\_bMessageHandled; // this is used in the undproc to indicate when the message is handled // address of the default window prof int m\_myOffset; // this is the offset to the extra data area for Revision 2 on tue Mar 01 18:25:20 1994 by STEVES DOWN Version 0.00.04.112 \*tlib-revision-history\*
I SLIDECIL.H 25-May-94,16:15:16, STIJN' First version under ILIB
\*tlib-revision-history\* added DnEraseBkGnd adopted create-GD1-objects-during-paint model for greater reliability and easier adaptation to changing colors 30 35 Page 1 of 2 40 this control 45 50

```
int GetScrollMax( MAND hand);
void SetScrollMax( MAND hand, int nvalue );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int GetScrollMint MAND hard );
void SetScrollMint MAND hard, int nvalue );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int GetScrollPost MAND h\nd );
void SetScrollPost MAND h\nd, int nValue );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // this utility recomputes and sets the tic ratio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void GetMeasurements( MAND hand,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // this utility routine computes a variety of drawing offsets
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void Drawflash( MWND hWnd, HDC hDC, int nOffset, BCOL bState );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // this utility routine draws the flash ON or Off at a screen position
                                                                                                                                                                                                                                                                                                                                                                                                           void OntButtorUp( NAMO hind, int x, int y, UINI keyflags );
void OntButtorUp( NAMO hind, int x, int y, UINI keyflags );
void OnteyOoan( NAMO hind, UINI vt, BOOL flown, int cRepeat, UINI flags );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BOOL Offerselliched HAND hird, HOC hdc );
wold Onferer (HAND hird, UINT state, int cx, int cy );
wold Onsize( HAND hird, UINT state, int cx, int cy );
wold OnsetScrollPost HAND hird, int relin, int reax, BOOL fledraw );
wold OnsetScrollPost HAND hird );
int OncetScrollPost HAND hird );
long OncetScrollPost HAND hird );
long OncetScrollPost HAND hird );
uint OncetScrollPost HAND hird );
uint OncetScrollPost HAND hird );
uint OncetScrollPost HAND hird );
wold OncetScrollPost HAND hird, MSG FAR* lpmsg );
wold OncetScrollPost HAND hird, BOOL FOOLDECLICK, int x, int y, UINT keyFlag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int GetTicCount( MARD hand );
void SetTicCount( MARD hand, int nValue );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void SetFlashState( MAD hand );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // we have a number of local window variables: These routines access // those variables for the current window.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void updatelicCount( MAND hund );
                                                                                                                                                                                                                                                                                    LRESULT undProc( HUND hund, UINT message, UPARAM uParum, LPARAM IParam );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // window messages we hendle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             void UpdatePosition( NUND hund, int nPos );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    t OnCreate( MARD hund, CREATESTRUCT *ipCreateStruct );
id OnHCDeatroy( MARD hund );
id OnSetFocus( MARD hund, MARD hundDidFocus );
id OnSillifocus( MARD hund, MARD hundDidFocus );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     offset 0: offset which has flashing rectangle offset 2: position of scroll bar offset 6: minimum value for scrollbar offset 6: maximum value for scrollbar offset 8: number of tic marks less 1 (min: 1)
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int & totalUnits, int & halfWidth, int & fullMeight, int & rangeWidth );
                                                                                                                                                                                                              SLIDECIL.N 7-22-95 2:09p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     extern DgnSlideControl slideControl;
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   35
                                                                                                                                                                                                          Page 2 of 2
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```

10			Rdefine BUFFER_51ZE 1024*8	define IM CHAMPELSTART adefine UM TRAINWORDS Adefine UM TRAINWORDS Adefine UM TRAIT RECOGNIZER AGEFINE UM TO TRAIT TO SPEECH BEFFINE UM TO TRAIT TO SPEECH	/* Capyright (c) 1995 by Dragon Systems, Inc."/ /* Capyright (c) 1995 by Dragon Systems, Inc."/ /* Capyright (c) 1995 by Dragon Systems, Inc."/ /* Capyright (c) 1995 by Dragon Systems, Inc."/ /* Capyright (c) 1995 by Dragon Systems, Inc."/ /* Adeline USR COMBO ID /* Adeline CAPYRICE (IST ID /* Adeline REC SIATE ISRI ID /* Adeline REC SIATE ISRI ID /* Adeline SIATI ISRI ID /* Adeline SIATI ISRI ID /* Adeline SIATI ISRI ID /* Adeline SIATI ISRI ID /* Adeline SIATI ISRI ID /* Adeline SIATI ISRI ID /* Adeline SIATI ISRI ID /* Adeline WANDE SIN ID /* Adeline WANDE TRESH ISRI ID /* Adeline WANDE TRESH ISRI ID /* Adeline WANDE TRESH ISRI ID /* Adeline WANDE TRESH ISRI ID /* Adeline WANDE TRESH ISRI ID /* Adeline WANDE SIN I	
15	WAPP.H 7-22-95 2:12p			LM USER+1001 LM USER+1002 LM USER+1003 LM USER+1004 LM USER+1005 LM USER+1005	1 Systems, Inc.*/ 101 102 103 104 105 116 117 117 117 117 117 117 117 117 117	-
20	12p	·		// start of utterance // start test dialog box // exit dialog box // start of utterance // start of utterance		
25	_			rance alog box or rance rance		_
30 35		÷				
40	Ž	·				
45	• •					
50						•
55	2	6 <del>5</del> 0,	<del></del>			

5 10 15 20	• s10.H 7-22-95 2:09p	<ul> <li>defined LOW 16 and NIGH 16 and MARE 32.</li> <li>ifridef _185, we were defining _IAR instead of XIAR.</li> <li>Rev I 9 11 teb 1992 16:\$3:42 PEIER</li> <li>Change the definition of Vollo to be a Badefine instead of a typedef. This makes std.h compatible with windows.h row.</li> </ul>	110et   32811	Rev 1.13 10 Mar 1993 10:54:18 DEAN cleaned up 32-bit defs Rev 1.12 02 Jan 1993 11:36:52 DEAN	<ul> <li>Rev 1.14 16 Mar 1993 16:19:38 BETSY</li> <li>Added ifdefe for MAC is MPW or Think C compiler.</li> <li>Added define for MAC is MPW or Think C compiler.</li> <li>Oefined 32811 on for MAC.</li> <li>Added amoro for icrementing a pointer by the size of a struct.</li> </ul>	* Rev 1.16 09 Jun 1993 14:56:40 BETSY * for Driver version 4.11.52. **Macintosh def of KFAR. Moved INC_PTR here. **Rev 1.15 01 Jun 1993 15:00:12 DEAM **ZORIECH support	Rev 1.17 23 Jun 1993 11:54:16 BETSY Hac types. Removed DurGetA5.	Pay 1.19 24 Jun 1993 10:08:40 DEAN Opps this time for sure! Pay 1.18 23 Jun 1993 15:16:48 DEAN Paulym: Bundef far and huge before #defining them (for Matcom's benefit).	Province to but the terminal defines it  Rev 1.20 16 Jul 1903 14:30:08 8878V  Additional defines for the Macintosh.	1.22 03 Aug 1993 13:17:50 _SIZE_T_DEFINED for Microsoft	Changes for BorlandC version 4 / 32 bits Changes for BorlandC version 4 / 32 bits Changes for Borland C 4 / 32 bits. Also, please define 16 bits for new 16 bit compilers (to aid the transition to 64 bits one day!)	Modifications: Nog: G:/usr/local/src/lib/vcu/std.h_v \$	<pre>** ** ** ** ** ** ** ** ** ** ** ** **</pre>
30	#define _1681T_	BORLANDE	#11def MSC #define MSDQS	MACINIOSH_ applec THINK_C	NICHC	/* Supported compilers TURBOCBORLAMOC	Nifrdef STD H /* pr	* Initial revision. 8-Oct-91 DGS Major rewrite as a	10-Dct-91 DGS BUG FIX. Need to d  Rev 1.0 09 Oct	• Rev 1.1 10 Oct 1991 15:06	Rev 1.4 14 Oct Cosmetic change - d Rev 1.3 10 Oct This time for sure.	Rev 1.5 15 Nov	gev 1.8 30 Jan Enclosed adefine MJ Rev 1.7 10 Jan as per Peter's sugg
40 45	Page 1 of 3	Borland C 4 defines this for 32 bit apps */ (including console apps) */	/* Microsoft C defines MSDOS */ /* FUTURE: define 16811/32811 as appropriate */	defined if MPU or Think C MPU Macintosh C compiler ( automatically defined ) Think C compiler for Mac ( automatically defined )	Retaware high C Compiler (automatically defined) Microsoft C compiler (ACT automatically defined) Matcom C compiler (is this auto-defined?) RS6000 compiler (NOT automatically defined)		protect against multiple includes of this file */	a result of software standards meeting.	IS  ed to define BYTE if BYTE_DEFINED is defined.  09 Oct 1991 11:06:06 DEAN	10 Oct 1901 15:06:32 OCAN ase witd.h is used	Rev 1.4 14 Oct 1991 13:31:32 DEAN Cosmetic change - don't #define 800L_DEFINED if it isn't already defined. Rev 1.3 10 Oct 1991 15:57:58 DEAN This time for sure.	Rev 1.5 15 Nov 1991 08:20:36 DEAN ODPS: BIGGEST SIZE was under the conditional Middl 12011 instead of TABLE THE SIZE was under the conditional Middl 12011 instead of	

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Bitdel WATCONC
Buttline MSDOS
Buttline 32811
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Addrine NO 0
Addrine TRUE 1
Addrine TALSE 0
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#define 186_
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### defined(_MACHIOSM_)
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#define SIG ENDIAN
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Rateline 32811
Rateline MSDOS
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#define 32817
#define MSDOS
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Butfine _MACINIOSH_
Butfine _32017
Butfine _BIG_ERDIAN_
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Bifroler MACINIOSH
Bifroler MACINIOSH
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MUGE huge
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/* all pointers are far! */
/* Watcom compilar #defines this! */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /* Watcom compiler #defines this! */
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  support this definition of a 48-bit pointer, but NighC does */
                                                                                                                                                                                                                                                      /* in 16-bit, only need seg:off */
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#define Huge
#nefine far
#define xfar
#endif
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typedef unsigned char
typedef unsigned short
typedef unsigned long
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef signed char 
typedef short int 
typedef long
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Ridetine NULL ((void *)0)

Rendif

Redetine NUGE_NULL ((void NUGE *)0)
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sinder BOOL DEFINED
typeder int BOOL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  signed by TE DEFINED BYTE;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /* Universal types
                                                                                                                                                                                                                                                                                                                                                                                    rinclude "Types.h"
typedef Boolean BOOL:
typedef Boolean bool.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Idefine BYIE unsigned char
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              edet int
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                                                                                                                                                                                                                                                         800L16;
800L16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bool, boulean;
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uns16, uint16;
uns32, uint32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.10;
17.10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /* ustd.h */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /* so our definitions work */
                                                                                                                                                                                       200 2 of 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /* ustd.h defines this */
/* 0, non-0 type */
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typedef void •
typedef BYIE •
typedef BYIE •
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #11def __HIGHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /* helpful mecro for defining a atructure */
#define SIRUCT(a) typedef atruct #8 x x; atruct
/* atructures defined using this macro can be
without the 'atruct' qualifier */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #define _BIGGEST_SIZE_ (Oxffff)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #irdef 32811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /* number of entries in an initialized array */
Budeline MEMIRIES(a) (sizeof(a)/sizeof(a)(0)))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bidefine PRIVATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #define ABS(x) ((x)<07-(x):(x))
#define MAX(a,b) ((a)<(b)?(a):(b))
#define MIX(a,b) ((a)<=(b)?(a):(b))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /* WACROS normally found in atdio.h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #if defined(__NCINIOSH__) && (_defined(__SC___) \| defined(ININK_C))
#include value_t.h>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #itdet 32811
#define_BIGGEST_SIZE_(Oxffffffff)
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*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // assumes p is a byte pointer:
#define INC_PIN(p,t) ((p)+=sizeof(t))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Idetine void
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /* for ANSI standard ASSERT.H */
                                                                                                                                                                                                                                                                                                                   $10.H 7-22-95
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INTEL COMPILER */
BORLAND COMPILER */
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* alternative */
• huge void pointer */
• alternative */
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Birdet MSDOS
Error! This code is meant f
Rendif
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#ifdef _HIGKC_
#ifndef _HIGKC_
#define _MIGKC_
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Ande! BYIE
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Bifdel 32 BIT DMLY
#ifndef 32BIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #define (ON 18(W2) ((Uns16)(W2))
#define #IGH 18(W2) ((Uns16)((Uns13)(W2)>>16))
#define #IGH 18(W2) ((Uns16)((Uns13)(W2)>>16))
#define #IGH 18(W2)((Uns16)((Uns16)((Uns13)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Uns16)((Un
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Bifrodet BIG Emplay

Bifrodet BIG Emplay

Bidetine SECOF(p) (((untilé *)k(p))(1))

Bodetine OFFOF(p) (((untilé *)k(p))(0))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #idefine ExtERN extern "C"
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#define PACKED_STRUCT(x) typedef struct _ ## x x; PACKED struct _ ## x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Notine BIG ENDIAN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bendit /" _STO_H_ not already defined
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typedef BYTE *PIR;
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This code is meant for 32 bit compilers only.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       / undo our
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is meant
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for MSDOS only.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if BYTE_DEFINED is defined */
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5		#define DDE TIMEDUT 3000 #define MAX SIZE 1000 #define BUFFER_SIZE 1024*B	// UserMessages  #define UM_CHANNELSTART #define UM_TRAINWORDS #define UM_TRAINWORDS #define UM_TRIT RECOGNIZER #define UM_THIT RECOGNIZER #define UM_THIT_DIALOG #define UM_DOE_TEXT_TO_SPEECH	Edetine WOOD_PAUSE_SLIDE_ID	addine REC 219 TENT 10 addine REC SIATE TERT 10 addine REC SIATE TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10 addine SIATI TERT 10	#define IDI_MY_ICON: #define USR COMBO ID #define ENTTE E.181 ID #define ENTTE BTR ID #define ENTTE BTR ID #define COMFIDENCE_TENT_ID	/* CODYFIGHT (c) 1995 by Dragon Systems, Inc.*/ /* Copyright (c) 1995 by Dragon Systems, Inc.*/ Binclude <mindows.h></mindows.h>
15	NCOACH.H 7-22-95 2:12p		LAN USER+1001 LAN USER+1002 LAN USER+1003 LAN USER+1005 LAN USER+1005 LAN USER+1005	110	&&&&&&&&&	<b>5</b> 5555 <sup>-</sup>	on Systems, Inc.º/
20	₹		// start of utterance // start test dialog bon // exit dialog box // start of utterance // start of utterance				
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// UserMessages #define UM_CHANHELSTART #define UM_TRAINWORDS #define UM_TRII_RECOGNIZER #define UM_INIT_DIALOG	Rottine EMROL USA COMBO ID Rottine ENIOL BIN ID Rottine EDII 55MA ID Rottine EDII 55MA ID Rottine RADIO 56MA E ID Rottine RADIO FEMALE ID Rottine RADIO FEMALE ID Rottine EMROL EXII BIN ID Rottine EMROL EXII BIN ID	Edefine SAY SIATE INT 10 Edefine SAY ZIP INT 15 Edefine SAY ZIP INT 15 Edefine PROWPI SIATE INT 10 Edefine PROWPI ZIP INT 15 Edefine PROWPI ZIP INT 15 Edefine WORD_PAUSE_SLIDE_10	Rdefine USR COMBO ID Rdefine PROBPI CORBO ID Rdefine ENICE [-15] [D Rdefine ENICEPHONE SIN ID Rdefine CONSTIDENCE TEXT ID Rdefine SAVEEXIT STN ID Rdefine BACKUP_BTN_IB	/* LENBOLL.N */ /* Copyright (c) 1995 by Dragor Finclude *uindows.h> #define IDI_NY_ICON
M USER 1001 M USER 1002 M USER 1003 M USER 1004 M USER 1005	2222222	######################################	<b>9</b> 250000000	by Dragon Systems, Inc.*/
// start of utterance // start test dialog box // start of utterance // start of utterance				

5				// UserMessages #define um CHANNELSTART #define um TRAINVOROS #define um ENTT #define um NIT RECOGNIZER #define um_INIT_DIALOG	Addrine VUTINER_ID	Sdefine SAY STATE THE ID Sdefine SAY STATE THE ID Sdefine SAY CITY THE ID Sdefine PROPET CTTY THE ID Sdefine PROPET STATE THE ID Sdefine PROPET STATE THE ID	seletine USR COMED 10 seletine PRODET CORRO 10 seletine ENTITE (15) ID seletine EXIT BY 10 seletine EXIT BY 10 seletine EXIT BY 10 seletine EXIT BY 10 seletine EXIT BY 10 seletine BACKUP_STN_10	/*VIRAIN.H */ /* Copyright (c) 1995 by Dragon Systems, Inc.*/ #include <windows.h> #define IDI_MY_ICOH 1</windows.h>
15	VTRAIN.N 7-22-95 2			LM USER+1001 LM USER+1002 LM USER+1003 LM USER+1004 LM USER+1005	125		<b>327</b> 25755	on Systems, Inc.º/
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```
class Ochase
                                                                                                                                                                                                                                                                                                                                                                                               voide first() const;
voide (ast() const;
voide next( voide p ) const;
voide prev( voide p ) const;
                                                                                                                                            int find( const void* v ) const;
int find( const void* v, CompareOCEntries cap, int sorted ist=0 ) const;
int find( const void* v, CompareOCEntries cap, int* position ) const;
// returns -1 if it cannot find the entry
// if only a cap function is given it is assumed it is an unsorted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        typedef int (*SortCompareOCEntries)( const void** given, const void** test );
// (given - test) ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  typedef int ("CompareDCEntries)/ commat void* given, commat void* test );
// (given - test) ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #include dassert.ha
#include detailab.ha
#include defa.ha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          void remove( void v );
void removeEntry( int i );
void removeAll();
                                                                                                                                                                                                                                                                                                                         void add( void* v );
                                                                                                                                                                                                                                                                                                                                                             void*& operator()( const int i ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #itndef ordcoll h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int count() const;
bool isEmpty() const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /* ORDCOLL.N */
/* Copyright (c) 1995 by Dragon Systems, Inc.*/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int increment() const;
int increment( int i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The OCBase class is a dynamic erray of pointers.

Before the first pointer is a 0 pointer, after the last pointer is another 0 pointer. The wordered part of the class means that do about whether that indexing corresponds to a sorting nothing to function and them by doing all adds at the proper indexes using the function and them by doing all adds at the proper indexes using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // constructors
OCBase( int initialSize = B, int incrementSize = B );
// destructor
OCBase();
                                                             5
                                                   10
                                                                                                             7-22-95 2:120
                                           15
                                                                                                                       and sortedist is TRUE we do
                                 20
                         25
                                                                                                                                                                                                 inline void** OCBese::next( void** p ) const
                                                                                                                                                                                                                                                                               inline void** OCBase::last() const
                                                                                                                                                                                                                                                                                                                                                        inline void** OCBase::first() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inline int OCBase::Increment( int )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inline int OCBase::Increment() const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline bool OCBase::isEmpty() const
                                                                                                                                  refurn(p+1);
                                                                                                                                                         assert( p < array array );
                     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inline int OCBase::count() const
                                                                                                                                                                                                                                                     return erreprerrayUsed-1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inline OCBase:: OCBase()
                                                                                                                                                                                                                                                                                                                                   return errey;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :
                                                                                                                                                                                                                                                                                                                                                                                                               return rtn;
                                                                                                                                                                                                                                                                                                                                                                                                                                       incrementSize = i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int rtn = incrementSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return incrementSize;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return( count() == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     return arrayused;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int arraySize;
int arrayUsed;
int incrementSize;
voidee array;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          delete () (array -1);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    void append( OCBase *given );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                void sort( SortCompareOCEntries cmp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // e log2 search
// if a position is given we do a log2 search and
// if position is given and the entry is not found, position with
// be the proper position this item should be added at;
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                                                                          Page 1 of 2
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```
:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        template <class T>
class OC : public OCBase
                                                                                                                                                                            rendit /* ordcoll_h */
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inline void OCBase::sort( SortCompareOCEntries compare )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inline void OCBase::removeAll()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inline void 0CBase::operator()( const int i ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inline voide OCOase::prev( voide p ) const
                                                                                                                                                                                                                                                             void append( OC<7> "given ) ( OCBase::merge( (OCBase") given ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       !** (irst() const ( return (!** ) OCBase::/irst(); )
!** last() const ( return (!** ) OCBase::last(); )
!** next( !** e ) const ( return (!** ) OCBase::next( (void** )e ); )
!** prev( !** e ) const ( return (!** ) OCBase::prev( (void** )e ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qsort( array, arraydsed, sizeof( void* ), (ComparaOCEntries)compare );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        void add( I* e ) ( OCBase::add( (void* )e ); )
void add( I* e, int i ) ( OCBase::add( (void* )e, i ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          errayUsed = 0;
                                                                                                                                                                                                                                                                                                      int find( 1" e, CompareOCEntries cmp, into position ) const ( return OCEsse::find( (const void ) e, cmp, position );
                                                                                                                                                                                                                                                                                                                                                                     int find( 1° e ) const ( return OCBase::find( (void* ) e); )
int find( 1° e, CompareOCEntries cap, int sortedList=0 ) const (
return OCBase::find( (const void* ) e, cap, sortedList );
                                                                                                                                                                                                                                                                                                                                                                                                                                                          T* remove( 1* e ) ( return (1*) OCBase::remove( (void* ) e ); )
1* removeEntry( int i ) ( return (1*) OCBase::removeEntry( i ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( count() < 2 ) return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               array( 0 ) * 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                assert( i <= arrayUsed );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return array(i);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        return( p · 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               assert( p < array*arrayUsed );
assert( p >= array);
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                                                                                                     ORDCOLL.# 7-22-95 2:12p
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5					-		Bendit // deta_h	#if locaug #define Nocaug #endif	Adetine TRUE	typedef int bool;	#iindet defs.h  Bdefine defs.h  #include <i imits.h=""></i>	/* DEFS.H */ /* Copyright (c)
10	DEFS.								o-		. <del>2</del>	/* DEFS.H */ /* Copyright (c) 1995 by Dragon Systems, Inc.*/
15	DEFS.N 7-22-95 2:12p											sterbs, Inc.*/
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int MypoP0::checkStack()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        static file *matrixfile;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static StringHS uniqueChoiceHypo;
static StringHS specialHypo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Hypotheses are generated in this module.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int Hypothesis::121( int 1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermediate intermedi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unsigned StringHS::keyHash( const SlinkBase* slb ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int StringHS::compare( const SLinkBase* alb1, const SLinkBase* slb2 ) const
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #include "hashalfa.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                char* Hypothesis::data;
int Hypothesis::dataLength;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return stringMash( ((StringSL* )slb).>s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return( strcmp( ((StringSL* )slb1)->s, ((StringSL* )slb2)->s ) );
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e (math.h)
e (assert.h)
e (ctype.h)
e (trie.h)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e stdio.h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( int i = 0; i < count(); i++ )
                                                                                                                                                                                                                                                                                                                                  // digits are following the letters and sit in the table iff 1 > a '0' & 1 & a '9' ) return( 1 · '0' · 27 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // punctuation is following the letters and digits if( the ',' & & | ce',' ) return( the ',' + 37 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // it is illegal to call this function except with letter // 'a'...'z' '0'...'9' and ' '
                                                                                                                                                                                                                                       // it is assumed all letterArgs are lowercase...
else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( hypo->nextDataIndex <* hypo->dataLength );
assert( hypo->nextBordIndex <* 100°hypo->dataLength );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mypothesis* hypo = (*this){ i ];
10
                                                                                                                                                                                           HYPO.CPP 10-20-95 3:11p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Includes NUMITENS definition
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypothesis::Hypothesis()
{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int Hypothesis::i2l( int 1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int AlphaHypothesis::initfromPhrase()
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hypothesis::Hypothesis(Hypothesis& h)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // assign memory array
char *ph * phrase;
char *spl * spelling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  memcpy( (void* )this, (void* )$h, sizeof( Hypothesis ) );
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prevoperation = PERMUTATION;
curScore = 0;
nextWordIndex = 0;
nextBotaindex = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // silence and the digits else
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // digits are following the letters and sit in the table if( 1 >= 1 & 1 <= 26 ) return( ( + 'a' -1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // punctuation is following the letters and digits
if( 1 >= 37 && 1 <= 40 )
    return( 1 - 37 • ',' );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // it is illegal to call this function except with letter // 'a'...'\epsilon' '0'...'\varphi' and '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // copy phrase into spelling without the spaces
for( int len = 0; *ph != '\0'; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            return( | == 0 ? ' ' : 1 - 27 + '0'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if ( isolpho( *ph ) )
                                                                                                                                                                                                                                                                                                                                                                                  else if( isspace( *ph ) )

**ph;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return( | == · · ? 0 : | · · b' • | );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         else if( isdigit( oph ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     *spl ** = *ph**;
**len;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *spl·· = *ph··;
   35
                                                                                                                                                                                           if( spt != spetting )

Page 1 of 7
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                                                                                                                                                                                                                                               ... . ...ids.
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yund AlphaHypoAC::clearUpNewWords( Recognizer* recog )
                                                                                                                                                                                                 int AlphaNypothesis::initfromSpelling()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int isPunct( char spl )
                                                                                                                                           fort int i=count(); i--; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ther "ph = phrase;
ther "spl = spelling;
                             5
                                                                                                                                                                                                                                                                                     return( len );
                                                                                                                                                                                                                                                                                                                                                                                                                                                          . o. . vd.
                                                                                                                                                                                                                                                                                                                                                                                                                                    142. J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for( int len = 0; *spl != *\0'; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( spl ss ···
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       return( ten );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . ov. = 1ds.
                                                                                                                                                                                                                                                                                                                                                **len;
white( *spt )
*ph** = *spl**;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         spl == '..' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ci se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( isalpha( *spl )
    isdigit( *spl )
    isPunct( *spl ) )
                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          en:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ph: = *spl *:;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             while( (*splin = *phrn) i= 1(0) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTPO.CPP 10-20-95 3:11p
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                                                                                                                    AlphaHypothesis::AlphaHypothesis( Recognizer* recog, char *letter, AlphaHypothes ** is& zr )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // constructor
// 3 parameters: recognizer , the zip and the.ZipResult class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlphaHypothesis::AlphaHypothesis( AlphaHyputhesis& zr )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               / constructor
tphaHypothesis::AlphaHypothesis( Recognizer* recog, AlphaHypothesis& zr )
                                                                                                                                                                          recog-raddword( wordld );
assert( wordld |= 0 );
                                                                                                                                                                                                                                                                                             isNewMord = ( (word!d=recog->word!d( spelling )) == 0 );
                                                                                                                                                                                                                                                            // buildNord builds and adds the WORD_ID to the state
if( isNewNord )
                                                                                                                                                                                                                                                                                                                                                                                                                                       memcpy( (void* )this, (void* )&rr, sizeof( AlphaHypothesis ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assert( wordld i= 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( isNewford )
wordId = recog->buildWord( spelling, phrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 momcpy( (void* )this, (void* )&zr, sizeof( AlphaNypothesis ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               memcpy( (void* )this, (void* )&zr, sizeof( AlphaHypothesis ) );
            30
                                                                                                                                                                                                                               wordld = recog->buildWord( spelling, phrase );
                                                                                                                                                                                                                                                                                                                                phrase[ numbords*2 · 1 ] a ·\0';
                                                                                                                                                                                                                                                                                                                                                              // set phrase correct
int numbords = initfromSpelling();
                                                                                                                                                                                                                                                                                                                                                                                                               stropy( spelling, letter);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // set boolean to 1 if the phrase does not have a word ID yet.
// If this word does not exists yet, most often this is the case.
// create a new model and add it to the state. Look in dragcpp.cpp
// for buildward() and addward()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog-vaddword( wordId );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  isNewWord = ( (wordId=recog->wordId( spelling )) == 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if( (*this)[ i ].isNewJord )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (*this)[ i ].isNewWord = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog.>deleteWord( (*this)[ i ].wordId );
        35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page 2 of 7
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void Hypothesis::propagate( PriorityQue<Hypothesis>* hpq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OneShotHeap Hypothesis::heap( 4096 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // get Probability from matrix
int& Hypothesis::counts( int type, char context), char maint, char emitted( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int compareHypothesist const voide given, const voide test )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return insertionScare( 12i(mainL))(\ 12i(\ contextL\ ) * MUMITEMS + 12i(\ cm\ e) ittedL ) ] ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return ((Hypothesis* )test)->curScore - ((Hypothesis* )given)->curScore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   emittedt ) );
                                                                                                                                                                                                                                                            skip sil==0
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 char history[ MAX_MORD HISTORY ];
strncpy( history, wordfistory, curwordindex );
history( curwordindex + 1 ) = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assert( curVataIndex <= dataLength );
assert( curVordIndex <= 10*dataLength );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         else if( type == PERMUTATION )
return permutationScore( (21(mainL)) { (21( context) ) * NUMITENS + (21(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( type ** DELETION )
return deletionScore[ l2i(mainL)][ l2i( contextL ) * 1 * l2i( cmittedL )
                                                                                                                                                                                                                                                                                                                                                                                                                                          c = datal curDataIndex 1;
int base = 12i( c );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int curbatoficlex a nextbatalindex;
int curbordindex a nextbordindex;
int prev0p a prev0peration;
int newScore, oldScore a curScore;
                                                                                                                                                                                                                                                                                                                                                                           assert( c >= 0 && c < 256 );
assert( base >= 0 && base < 37 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              assert( context >= 0 && c < 256 );
assert( context >= 0 && context < 37 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int c = ( curDataIndex != 0 ? data[ curDataIndex : 1 ] : ! ! );
int context = (2i( c );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            wordNistory[ nextWordIndex ] = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int (lag = 0;
                                                                                                                                                                                                                                                                             // do the permutation propagation for (int is1; i-NUMITEMS; ++i )
                                                                                                                                                                                                            history! curWordIndex ] = i21( i );
10
                                                                                                                                               // language modeling...
if 'WordDC::doWordsExist( history, curWordIndex+1 ) )
                                                                                                                 HYPO.CPP 10-20-95 3:11p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  => ning yet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 so fore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( prev0p is INSERTION & (curNordindex is 0 [] curDateIndex+1 < datate => ngih) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WordIndex 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ITEMS*context + + ] );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  eap ) Hypothesis( "this ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ā
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // any existing string was checked against the language model
                                                                                                                                                                                                                                                                                                                                                                                                                             history( curwordIndex ) = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // try a deletion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // propagating it
                                                                                                                                                                                                                                                                                                                                                         // test score for this candidate if ( deletionScore( base ) ( context ) < 70 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // make new hypothesis if good enough score
// The threshold is relative to the number of letters se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     newScore = ( oldScore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // so, for now we consider those "unknowns" as well.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // value 92 is value when no data were found in the trai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // test score for this candidate
ift permutationScore[ base ][ NUMITEMS*context + i ] > 7
                                                                                                                                                                                                                                                                                                            newScore = oldScore + deletionScore[ hase ][ context ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              il newScore < 100 )
       35
                                                                                                                                                                                                                                          // make new hypothesis if good enough score if( newScore < 100 )
                                                                                                                                                                                             Hypothesis *hypo = ( flag == 0 ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypo->nextBardindex = curBardindex +1;
hypo->nextBaraindex = curBaraindex +1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hypothesis *hypo = ( flag == 0 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypo->curScore = newScore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypo->wordHistory( curWordIndex + 1 ) = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hypo->wordHistory[ curNordIndex ] = history[ cur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypo->prev0peration = PERMUTATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hpq->push( hypo );
                                                                                                                      Page 3 of 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               * permutationScore! base )[ NUM
          45
                                                                                                                                                            this :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 5 in ...
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** skip sil==0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :
                                                                                                                                                                                                                                                                                                   => Wordindex 1;
                                                                                                                                                                                                                                                                                                                                                                                                       => &heap ) Hypothesis( "this ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a> ning yet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             => EMS*context + i ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               wvpo.cpp 10-20-95 3:11p eap ) Hypothesis( *this ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ā
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( prevOp 1= DELETION && curWordIndex < MAX_WORD_HISIORY-dataLength-2 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // try insertion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // make new hypothesis if good enough score // The threshold is relative to the number of letters sa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // 40 is an insertion penalty newScore = ( oldScore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // lenguege modeling...
if( !WordDC::doWordsExist( history, curWordIndex+1 ) )
    continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( newScore < 100 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // so, for now we consider those "unknowns" as well.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // value 92 is value when no data were found in the trai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // rest score for this cendidate
if( insertionScore[ base ][ NUMITEMS*context + i ] > 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      history( curWordIndex | = i2l( i );
  10
                                                                                                                                                                                                                                                                                                                          hypo->wordHistory( curWordIndex ] = history( cur
                                                                                                                                                                                                                                                                                                                                                              flag = 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothesis *hypo = ( flag == 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   continue;
                                                                                                                                                                                                                    hypo->nextWordIsdex = curWordIsdex + 1;
hypo->nextDataIndex = curDataIndex;
                                                                                                                                                                                                                                                                                 hypo-swordHistory( curbordIrdex + 1 ] = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypo->nextWordIndex = curwordIndex;
hypo->nextDateIndex = curDateIndex +1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypo->curscore a newScore ;
                                                                                                                                                                           hypo-sprevOperation = INSERTION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hpq->push( hypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hypo->prevOperation = DELETION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypo->wordHistory[ curWordIndex ] = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    flag = 1;
  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . insertionScoret base | I NUMII
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // immemissions
                                                                                                                                                                                                                                                                                                                                                                                                                              : Text
25
                                                                                                                                                                                                // Function called from within onSpeech() in wapp.cpp
// Stack decoder algoritm
                                                                                                                                                         // numberds corresponds to wasCoodZipPhrase in the onSpeech function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     => &heap ) Hypothesis( *this ) );
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // try special case
if( curlordindex to 0 || curDataIndex*2 < datatength )</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      char pattern( 5 );
pattern( 0 ) = data( cur0ataindex );
pattern( 1 ) = data( cur0ataindex + 1 );
pattern( 2 ) = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1) found (= 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  StringSL *found = specialHypo.find( &test );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             StringSL test( pattern );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( newScore < 150 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   newScore = oldScore + 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            strcpy( emission, found-remission );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cher emission[10];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          history[ curWordIndex ] = '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for ( int m = 0; m < len; m++)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int ten e strten( emission );
    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     history( curvordIndex++ ) = emission( m );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypo->nextWordIndex = curWordIndex;
hypo->nextDataIndex += 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothesis *hypo = ( flag == 0
                                                                                                                                                                                                                                                                                                                                                                                                         hypo->curScore = newScore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                hypo->prevOperation = BLOCKPERMUTATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      strcpy( hypo->wordNistory, history );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                flag = 1;
                                                                                                                                                                                                                                                                                                                                                                   hpq.push(hypo);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hpq->push( hypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 4 of 7
hypo->curScore = newScore;
      40
      45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 7 Shi s
      50
```

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// AlphaHypoAC is a growable array. It inherits from AlphaHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int Hypothesis::build( Recognizer* recog, AlphaHypoAC* choicelist,
AlphaHypothesis& zr, int numHords, int numHypo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // we have those, we will have to convert the information to
// a AlphaNypothesis class, which contains info about the recognizer's
// opinion on the hypothesised letter phrases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       topList.removeAll();
hypoPo_removeAll();
HypothesIs::hesp.empveAll();
uniqueNypo_removeAll();
uniqueChoiceNypo_removeAll(); // used in propagate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hypothesis *hypo = new( &Hypothesis::heap ) Hypothesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // the class Hypothesis is used to generate the hypotheses. Once
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // and has some additional checks
static MypoPO topList( compareHypothesis );
static HypoPO hypoPO( compareHypothesis );
static StringMS uniqueMypo;
                                                                                                                                                                          // Get memory for ChoiceList (of type AlphaHypAC:AlphaHypothesis)
                                                                                                                                                                                                                                   // now fill Choicetist
int con=toptist.count(); // maximum 40, can be less
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static PriorityQue< Hypothesis > topList( compareHypothesis );
static PriorItyQue< Hypothesis > hypoPQ( compareHypothesis );
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypothesis::date = zr.spelling;
Hypothesis::datelength = numberds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        while( topkist.count() < numblypo && 0 l= (hypo=hypoP0.pop()) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypoP@.push( hypo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // for Debugging purpose. MypoPG inherits from PriorityQue
// and has some additional checks
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int count = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // 1111 revisit this condition for insertion and deletion if the revisit this condition for insertion and deletion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              StringSL *found = uniqueHypo.find( &test );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    StringSL test( hypo->wordHistory );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypo->propagate( &hypoP0 );
                                                                                                                                                                                                                                                                                                                                                                                 if( hypoPq.count() > 1000 )
hypoPq.removeEntriesIot 0, 500 );
10
                                                                                                                                          MYPO.CPP 10-20-95 3:11p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uniqueHypa.add( new StringSL( hypa->wordHistory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          topList.push( hypo );
   15
20
   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // read date from file into matrix
void Hypothesis::filtMatrix( int type, int numEmitted
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // allocate memory and zero it void Hypothesis: initMatrix( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          => ypoAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  => getting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return numblords;
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               new( (void* )( &( (*choiceList)[ j ] ) ) AlpheHypothesis( recog, zr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if (cnt )
                                                                                                                                                                                                                                                                                               // initialize with volues from file
char Line(NUMITEMS * 20);
char *pLine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // allocate memory
for( int i = 0; i < NUMITEMS; i++ )</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int j = choiceList->makeRoom( 1 );
                                                                                                                                                                                                             // Read matrix
for( int i = 0; i < NUMITEMS; i++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     char digitStr(20);
                                                                                                                                                                                                                                                                                                                                                                                                                   int lineSize = NUMITEMS * 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         long score;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       initialize matrix with 0's
r( i = 0; i < NUMITERS; i++ )
r( or( int j = 0; j < NUMITERS; j++ )
for( int k = 0; k < NUMITERS; k++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              permutationScore[ i ] = new int[ NUMITEMS * NUMITEMS ];
insertionScore[ i ] = new int[ NUMITEMS * NUMITEMS ];
deletionScore[ i ] = new int[ NUMITEMS * 1 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // the class for the choice list.
// After this, we have our ContRecog choice list,
// Have a look at AlphaHypothesis::AlphaHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // SD_WORD id's for the digit strings, and move it into a AlphaH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              while( cnt: )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // process the data from topList() class into a AlphaMypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // Make sure choice list is larger enough
int i = choiceList > makeRoom( cnt );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      new( (void* )( &( (*choiceList)( i++ ) ) ) )
AlphaHypothesis( recog, topkist( cnt )->value(), zr );
         35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           deletionScore[i][ | * 1 ] = 0;
insertionScore[i][ | * NUMITEMS * k] * 0;
permutationScore[i][ | * NUMITEMS * k] * 0;
                                                                                                                                          Page 5 of 7
            40
            45
               50
```

```
// read data from a matrix file
void Hypothesia::readMatrixFile( char *matrixHame )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . ore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 m> core;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        => score;
  5
                                                                                                                                                                                                                                                                      char time(200);
int limeSize = 200;
int matrixType = 0;
                                                                                                                                                                                             // a name should have been defined via an open file dialog box
if( matrixHame(0) == 0)
    return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // take last empty line
fgets( pline, lineSize, matrixFile );
                                                                                                                                                           // open in read mode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for( int ) = 0; j < NUMITEMS; j++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 !gets( time, lineSize, matrixfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Read the Main letter and the row of letters fgets( Line, lineSize, matrixfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pline = line;
pline+s4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // get the lines with scores
if( fgets( Line, lineSize, matrixfile ) == NULL )
    return;
  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for( int k = 0; k < rumEmitted; k++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NYPO.CPP 10-20-95 3:11p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // read digits
white( isdigit( *ptine ) )
digitStr[ [++ ] = *ptine++;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // find a number ( = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       switch ( type ) (
case Oficilon:
    deletionScore(i)(i*numEmitted * k) = 3*s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   score = atol( digitStr );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // skip anything different from digits while( lisdigit( *ptine ) ) ptine**;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             case PERMUTATION:
permutationScore[i][j*numEmitted + k] =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             case INSERTION:
insertionScore(i)lj*numEmitted + kl = sc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           break:
  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // skip first column
20
  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // smooth date void Hypothesis::smoothLogMatrix( char *type, int numEmitted )
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // there are 3 types of matrices
for(int m = 0; m < NUMITPE; m++)</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               initMatrix():
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   assert( matrixfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( istrcmp( type, "Permutation" ) )
letterslog = permutationScore; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fclose( matrixfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            matrixfile = fopen( matrixName, "rt" );
                                                                                                                                                                                                                                                                                                                                                                                                                       else if ( !strcmp( type, "tosertion" ) )
letterslog = insertionScore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int** letterslog;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int log1 = 0;
int mirrorlog = 0;
                                                                                                                                                                                                                                                                                                                       // i == 1 and k == 1: ignore the silence case
for( int i = 0; i < NUMITEMS; i++)</pre>
                                                                                                                                                                                                                                                                                                                                                                                else return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if( !strncmp( Line, "Detetion", 8 ) )
matrixlype = DELETION;
else if( !strncmp( Line, "Permutation", 11 ) )
matrixlype = PERMUTATION;
else if( !strncmp( Line, "Insertion", 9 ) )
matrixlype = INSERTION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fgets( Line, lineSize, matrixfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             switch ( matrixType )(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // get empty line
tgets( Line, lineSize, matrixfile );
                                                                                                                                                                                                                                                                                for( int j = 0; j < NUMITEMS; j++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                case Official Official ( Official );
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   case PERMUTATION:
    filinatrix( PERMUTATION, NUMITEMS );
    break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           case INSERTION: filtMotrix( INSERTION, NUMITERS );
bresk;
    35
                                                                                                                                                                                                                                            for ( int k = 0; k < nuinfmitted; k++)
                                                                                                                                                                                     // these values are all zero
if( i == k ) continue;
        40
        45
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```

```
s> tallog + 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *> S + k );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   * * * ( log1 + mirrorlog ) / 2;
                                                                                                                                                                                                                                                                        27 0g*8/5 )
                                                                                                                                                                                                                                                                                                                                     ** verage plus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23 09 ) ( 15 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       z> y close
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *> rlog • 10;
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cher warning(100);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for( i = 0; i < NUMITEMS; i++)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int count = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int totallog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( int k = 0; k < numEmitted; k++)
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                             count = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // these values are all zero if( i == k )continue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 totallog = 0;
                                                                                                                                                  if( letterstog[i][ 0 + k ] > totaltog ;
letterstog[i][ 0 + k ] = totaltog;
                                                                                                                                                                                                                                                                                                                                                                                         // amooth the column for( j = 0; j < NUMITEMS; j++ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if count )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fort int j = 0; j < NUMITEMS; j++ )
                                                                                                     NYPO.CPP 10-20-95 3:11p
                                                                                                                                                                                                                                                                                                                                                     // If it is really off the average, assign the a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 iff letterstogf i ][ j * NUMITEMS + k ] < 92 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            else iff log1 < 92 && mirrortog < 92 )
if( log1 > mirrortog && ( log1 - mirrort
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // tog) has no data or never occurred
// mirrortog has better data
if( tog) = 92 && mirrortog < 92
&& (tog) = mirrortog) > 15
&& letterstog[i][j = NUMITEMS - k] = mirro
                                                                                                                                                                                                                                                                                            // on offset
if( lettersLog( i )( j * NUMITEMS + k ) > totalL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // both values are smaller than 92 and are prett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mirrorlog = (etterslog(k)); *NUMITEMS + i);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      log1 = letterstog[i][j = NUM!IEMS + k];
                                                                                                                                                                                                                                                    letterslog[ i ]{ j * NUMITEMS + k ] = to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           totallog *= letterslog( + )( j * NUMITEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   totallog = totallog / count;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     count **;
  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lettersLog[i][j * NUMPTERS + k ]
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  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // independent function int compareChoice( const void* given, const void* test )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // read data from a matrix file
void Hypothesis::readSpecialFile( char *specialName )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return ((Choice* )test)->scare - ((Choice* )given)->score;
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           while( fgets( Line, lineSize, matrixfile ) f= NULL )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // open in read mode
specialFile = fopen( specialMame, "rt" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // a name should have been defined via an open file dialog box
if( specialName[0] ** 0)
    return;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char pattern(10];
char emission(10);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      char tine(200);
int lineSize = 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fclose( specialfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         assert( specialfile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( found == 0 ) specialHypo.add( new StringSL( pattern, emission ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    StringSt *found * specialHypo.find( &test );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               StringSL test( pattern, emission );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sscanf( Line, "%s %s", pattern, emission );
  35
                                                                                                     Page 7 of 7
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```

```
#define DELETION
#define PERMUTATION
#define BLOCKPERMUTATION
#define INSERTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #inctude "ordcoll.h"
#inctude "arrcoll.h"
#inctude "oneshot.h"
#inctude "stack.h"
#inctude "dragopp.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  class AlphaHypothesis
                                                                                                                                                                                                                                                                                                                                                                        public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      class StringHS : public HS< StringSt >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   class StringSL : public SLink< StringSL >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #ifrdef hashalpha_h
#define hashalpha_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // HASHALFA.H
// Header file for spelling application classes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    int comparet const StinkBase", const StinkBase" ) const;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unsigned keyHash( const SLinkBase* ) const ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    StringSt( char *ss ) { strcpy( s, ss ); }
StringSt( char *ss, char *so ) { strcpy( s, ss ); strcpy( emission, so )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          char s(50);
char emission[10];
                                                                                                                                                              // CityHypothesis* ch;
AlphaHypothesis( AlphaHypothesis& );
AlphaHypothesis( Recognizer*, AlphaHypothesis& );
AlphaHypothesis( Recognizer*, char*, AlphaHypothesis& );
AlphaHypothesis() ( );
                                                                                                                                                                                                                                                                              boot isNewWord;
SD_WORD word1d;
5
                                                                                                                                                                                                                                                                                                                                char phrase[ UTT PROMPT_LENGTH ];
char spelling[ UTT_PROMPT_LENGTH ];
                                                                                                                            int initfromPhrase();
10
                                                                                                   NASHALFA.H 11-6-95 2:30p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CONFIDENTIAL
20
25
                                                                                                                                                                <u>.</u>:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    class Hypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class AlphaHypoAC : public AC< AlphaHypothesis >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protected:
int 121( int 1 );
int 121( int 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;;
                                                                                                                                                                                                                                                                                                                                                                        static int build( Recognizer*, AlphaHypoAC*, AlphaHypothesish, int, int
                                                                                                                                                                                                                    void smoothlagMairia( char *type, int numEmitted );
                                                                                                                                                                                                                                                         void readMatrixFile( char *matrixName );
void readSpecialFile( char *specialName );
                                                                                                                                                                                                                                                                                                               char* value() { return( wordHistory ); )
                                                                                                                                                                                                                                                                                                                                                                                                                                                 void propagate( PriorityQuerHypothesis>* hpq );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mypothesis( Mypothesis& h );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static char* data;
static int dataLength;
int nextDataIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static OneShotHeap heap;
static int permutationScore[ NUMITEMS ];
static int insertionScore[ NUMITEMS ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              void initMatrix();
void fit(Matrix( int type, int numEmitted );
                                                                                                                                                                                                                                                                                                                                                                                                           int& counts(int type, char maint, char contextt, char emittedt);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothesis();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               int prevOperation; int curScore;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char wordHistory( MAX_MORD_HISTORY );
int nextWordIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           void clearUpNewNords( Recognizer* );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AlphaHypoAC( unsigned initialsize = 5, unsigned incrementaize = 5 ) : AC< AlphaHypothesis >( initialsize, incrementaize ) ( )
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int initfromSpelling();
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                                                                                               Page 1 of 2
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```

5 10 15	MASHALFA.H 11-6-95 2:30p		Jendi t	int compareChoice( const void® given, const void® test );	<pre>class HypoPQ : public PriorityQue &lt; Hypothesis &gt;</pre>	);	(hoice() ( score = 0; );	cher word(200); int score;	class Choice ( public: static OneShotHeap heap;
25 30		· · · · · · · · · · · · · · · · · · ·			int incrementSiz	·			
35	Page 2 of 2								
40 45	<b>3</b> 2					-	°Ç		
50	<b>W</b> it	<del>=</del>							· <del>-</del>

```
linclude «stdilb.h»
linclude «string.h»
linclude «string.h»
linclude "seq.h"
linclude "ordcoll.h"
linclude "ordcoll.h"
linclude "arrcoll.h"
linclude "trie.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WordOC* WordOC::twoletters( LETTERS * LETTERS * 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bool WordDC::doWordsExist( cher* pat, int numtetters )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // compare word int wordcompare( comst void* test )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /* Module to load word list into an ordered culter trun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int boolwordCompare( const void* given, const void* test )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adeline LETTERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    include <iostream.hv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . return strncmpi( (char* )given, (char* )test, strlen( (char* )given ) );
    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return stricmp( (char* )given, (char* )test );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // let one letter hypotheses live if numLetters ** 1) return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // 2 tetter words are put in special index
WordDC *woc;
                                                                                                                                                                                                                 il( tound != ·1 )
return !;
                                                                                                                                                                                                                                                                          int found = woc->find( pat, boolWordCompare, &position );
                                                                                                                                                                                                                                                                                                                                                      // 2 or more letters, maybe not a word
woc = twoLetters( getWordOCFromPat( pat ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if ( numLetters == 2 )
                                                                                                                                                                                                                                                                                                                   int position:
                                                                                                                                                                          if( position != 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // is pattern a 2 letter word woc a twoLetters[ LETTERS ];
                                                                                                                                if( 0 == strncmpi( pat, ("woc)( position - ) ], numLetters ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                       if( found i= ·i )
return i;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           int found = woc->findt pet, boolWordCompare, &position );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int position;
10
                                                                                                             TRIE.CPP 9-22-95 4:24p
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  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int WordOC::getMatchingWords( WordOC* outOc, char* pat )
    30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // 2 letter words are put in special index
WordOC *woc * NULL;
WordOC *woc2letters * NULL;
                                                                                                                                                                                                                                                                                                                                                                                  // if 2 letter words need to be looked up
if( woc2letters )(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            int found = woc->find( pat, boolWordCompare, &position );
// -1 means MOT found
if( found ia -1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         int position;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if ( numberters == 2 ) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int numLetters = strien( pat );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( position != woc->count() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   while( found > 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         woc2letters = twoletters[ LETTERS - LETTERS ];
woc = twoletters[ getWordDCFromPat( pat ) ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( 0 == strncmpi( pat, (*woc)( position ), numLetters ) )
    return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              woc = twoLetters{ getWordOCFromPat( pat ) ]; '
                                                                                                                                                                                                                                                                                                                                             int found a woc2letters->find( pat, boolWordCompare, Aposition )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // return now if 2 letter words were not looked up
if (!woc2letters)
return woc->count();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            while( position < cnt )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int ten a strient pat );
                                                                                                                                                                                                                                                                   // -1 means NOT found if( found i= -1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     int cut + woc-repunt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( 0 == strncapi( pat, (*woc)( --found 1, ten ) )
out0c-radd( (*woc)( found 1 );
      35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return 1;
                                                                                                                                                                                                                            int ten = strlen( pat );
                                                                                                                                                                                     while (found > 0)
                                                                                                                                             if( 0 == strncmpi( pat, (*woc2letters)[ --found
                                                                                                                     Page 1 of 3
      40
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```

```
void WordDC::init()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Given a spelling return index in twoLetter array
// spelling can also be a pattern
int WordDC::getWordDCt char* pSpelling )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // print words
void WordOC::printWordOC()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     => ], (en ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ** ], (en ) )
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int numberOfWords = count();
for( int i = 0; i < numberOfWords; i++ ) (
    printf( "Xa\n", (*this)[ i ] );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  assert( pSpelling L& *pSpelling );
int index = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( twoLetters[ 0 ] == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                         if( 0 se *(pSpelling + 1) || 0 se *(pSpelling + 2) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               return( outOc->count() );
) // if (found s= -1)
                                                                                                                                                                                                                                                                                                                                                                                                                        index = LETTERS * LETTERS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for( int i a LETTERS * LETTERS + 1; i--; )
                                                                                                                                                                                                                                                                                                    // index in wordDC based on first 2 letters
int c = tolower( *pSpelling );
if( c >= 'a' && c <= 'z' )</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    twoLetters( i ] = new( &heap ) WordDC();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                while( position < cnt )
10
                                                                                                                                                                                                      c = tolower( *(pSpelling + 1) );
if( c >= 'a' && c <= 'z' )</pre>
                                                                                                                                                                                                                                                                 index = LETTERS * ( c · 'o' );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       int cnt = woc2letters->count();
                                                                                                  TRIE.CPP 9-22-95 4:24p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              position*;
                                                                                                                                                                 index ** ( c · 'a' );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( 0 == strncmpi( pat, (*wnc2letters)! position
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        outOc->add( ("woc2letters)( position ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outOc->add( (*woc2letters){ found } );
15
20
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // class WordDC member function to add words in the right place of
// twoletters
void WordDC::addWord( char *pSpelling )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Given a spelling return index in twoLetter array // spelling can also be a pattern int wordDC::getWordDCFromPat( char* pSpelling ) {
                                                                                                                          void main(int argc, char* argv[])
                                                                                                                                                                                                                                                                                                                            // Check spelling
int WordOC::checkSpelling(char *spell)
                                                                                                                                                                                                               char *p;
for( p = spell; *p; p++ )
  if( lissiphe(*p) )
    return 0;
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return index;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // for now same index as 2 letter words if( c >= '0' && c <= '9' ) index = LETTERS * LETTERS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WordDC* woc = twoletters( getWordDC( pSpelling ) 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           else if( c >= 'a' && c <= 'z' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    assert( pSpelling && *pSpelling );
int index = 0;
                                                                                                                                                                                     return 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if ( found == -1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          int found = woc->find( pSpelling, wordCompare, &position );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 int position;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             int c = tolower( *pSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return index;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char *s = new( &heap ) char[ strlen( pSpelling ) + 1 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  strcpy( s, pSpelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  index = LETTERS * ( c · 'a' );
                                                                                                                                                                                                                                                                                                                                                                                                                      woc-redd( s, position );
                                                                                                                                                                                                                                                                                                                                                                                                                                                               striurt s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           c = tolower( *(pSpelling + 1) );
if( c >= 'a' && c <= 'z' )</pre>
  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      index += ( c · 'a' );
                                                                                                      Page 2 of 3
    40
    45
    50
```

```
rendit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           char line [100];
char spetting(50);
char key(3);
int tength;
int index;
                                                                                                                                                                                                                                                                                                                    fclose(infile);
fclose(outfile);
 5
                                                                                                                                                                                                                                                                                                                                                                                                      // Given a word return list
WordOC::getMatchingWords( ImpMoc, "no" );
tmpMoc -printMardOC();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if (argc < 3)
printf("\n USAGE: «Word List» < output >");
                                                                                                                                                                                                                                                                                                                                                           //it( |WordOC::doWordsfxist( "xy" ) )
// printf( "Wothing" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           infile = fopen( argv(1), "rt" );
outfile =fopen( argv(2), "wt" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILE * infile;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // initialize twoLetter words WordOC::init();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // my own local temporary wordOC WordOC *tmpMoc = new WordOC();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // read in file
while( fgets( line, 100, infile ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if (noSpecialWord) (
    length = strien( spelling );
    if ( length < 2 )
        strcpy( key , spelling );</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sscanf( line, "%s", spetling );
int noSpecialWord * WordOC::checkSpelling( spetling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WordOC::addWord( spetting );
10
                                                                      TRIE.CPP 9-22-95 4:24p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    strmcpy( key ,spelling , 2 );
key(2) = 0;
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 35
                                                                        Page 3 of 3
    40
    45
    50
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212

```
#include "dragcpp.h"
#include "stack.h"
#include "oneshot.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          public:
bool isHewlord;
SD WORD word;
long value;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              class Hypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class AlphaHypoAC : public AC< AlphaHypothesis >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Public:
ZIPHypoAC( unsigned initialsize > 5, unsigned incrementsize > 5 )
: AC< ZipHypothesis >( initialsize, incrementsize ) ( )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     difinded hypo h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        public:
static OneShotHeap heap;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protected:
// static int confusionScore( 100 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          class AlphoHypothesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #define BAD (1000)
                                                                                                                                                                                                                                       Mypothesia( Hypothesis& h ) (
    currentScore = h.currentScore;
    nextWordIndex = h.nextWordIndex;
    memcpy( wordHistoryArray, h.wordHistoryArray, sizeof( wordHistoryArray )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   void clearUpNewWords( Recognizer* );
                                                                                                                                                                                                                                                                                                                                          Hypothesis() ( currentScore = BAD; nextWordIndex = 0; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZipHypothesis( Recognizer*, long zip, char* stateHame ); ZipHypothesis( Recognizer*, const char*, const char*);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  char spelling! UTT PROMPT_LENGTH ];
char phrase! UTT_PROMPT_LENGTH ];
                                                                                                                                                                   void propagate( PriorityQuerHypothesis>* hpq, int* data, int state1d );
                                                                                                                                                                                                                                                                                                                                                                                                    long currentScore;
long nextWordIndex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          int wordHistoryArray[ 5 ];
                                                                                                                              long value() (
    5
    10
                                                                                                    ктРО.N 11-6-95 2:47p
    15
20
  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #endif // hypo_h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 extern void buildHypothesis( Recognizer*, AlphaHypoAC*, char*, char*, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return( wordHistoryArray1 0 ] * 10000L * wordHistoryArray1 ] > 1000L * wordHistoryArray1 3 ] * 10L * wordHistoryArray1 3 ] * 10L * wordHistoryArray1 3 ] * 10L * wordHistoryArray1 4 ] );
    30
    35
    40
    45
    50
```

213

5	vord SD_CALLE  #3 NT_event  BOOL FAR PASC  #4 M, LPAR	void ** tong ) bool tong ) bool bool bool bool	t ch ) cmd, ini , HAND,	unsigned int int int int int int int int int int	FUNCTIONS  1. Functions declared return Class Value	CHOICE.CPP  Main module: V
10	void SD_CALLBACK _export Digwin ::posiSpeechEvent( SD_CHAM) == NT _exentin )  BOOL FAR PASCAL _export Digwin ::wndbroc( HuND hund, UINT => m, LPARAM (Param )  CHOICE.CPP 10-26-95 3:18p	Digvin Digvin Digvin Digvin Digvin Digvin	<b>=</b> -	word!d!oCustomCityHS::compare( slb2) const  ::FindFilePath ::findFilePath findFilePath ::findFilePath  class	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
. 15	(_export Digwin ::posiSpeechEvent( SD_CHAMRE) _export Digwin ::wndbroc( HUND hund, UINT mc (Param )  CHOICE.CPP 10-26-95 3:18p		::::::::::::::::::::::::::::::::::::::	WordIdToCustomCityMS::keyMash( const SlinkBase') const SlinkBase') const SlinkBase') const SlinkBase';	and defined in MAPP.CPP:	ctionality of the a
20	message,	apt(A) or(Int ladlabe) adlabe)	::onSpecch( NUMD hwnd, SD_CHANNE ::onSysCommand( NUMD hwnd, UINI ::onCommand( NUMD hwnd, UINI cmd ::onTimerDrawVU( NUMD hwnd, UINI ::onDestroy( NUMD hwnd )	slb)	MAPP.CPP:	//////////////////////////////////////
25	SD CHARME EVE	ypothesis& e, char fa olig, HAND, sleep( MAN estword )	SD_CHANNE word, UINI , UINI cmd hund, UINI	const Stin		· ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '
30	#include <pre> #include <pre> #include <ddeml.h> extern long computeMemoryUse();  // This is the instance of the DgnSlideControl Page 1 of 17</ddeml.h></pre></pre>		#include suindowis.h> #include string.h> #include string.h> #include sdir.h> #include stdiib.h> #include stdiib.h> #include stdiib.h> #include stdiib.h> #include stdiib.h> #include stdiib.h>	class DigWin class FindFilePath class AppWin struct ConfigCommands	2. Main function int PASCAL WirMaint MINSTANCE hInst, MINSTANCE hP av int mindshow) CLASSES declared in WAPP CPP	void Applin  >> , HUND, UINI )  void Applin Applin void Applin Applin bool Applin  >> UCT FAR* )  long FAR PASCAL export Applin  >> m, LPARAM (Param )
35	ne demuryJse(); ance of the DgnSl	( <del>)</del>	ě	lePath gCommands	HINSTANCE blast,	
<b>40</b>	istideControl Page 1 of 17			anamanan	HINSTANCE NOT	::undProc( HUND hu
<b>45</b>				class Digwin class findfilePath class Appwin struct ConfigCommands	revinstance, LPSTR lpszCadine.	::onCommand( NUND hund, UINT cmd ::onDestroy( NUND ) :onHCDestroy( NUND ) :onClose( NUND hund ) :onCreate( NUND hund, CREATESIR :onCreate( NUND hund, CREATESIR
50	Men ioi	<u>.</u>		······································	Cook ine.	CREATESTR

```
static char femcityVocil
static char femalphaVocil
static char malcityVocil
static char malalphaVocil
static char wordVocil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rdefine WAKEUP STATE Rdefine ALPHA STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #include "hashalfa.h"
#include "trie.h"
#include "deamon.h"
#include "traincpp.h"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           extern HINSTANCE

*> Init()
HINSTANCE

*> ...
                                                                                                                                                                                                                                                                                                                                                                                                                             // global because used in train.cpp
char* cltyUser = origCityUser;
char* cityUse = 0;
char* alphaVoc = 0;
                                                                                                                                                                                                                                                                               static char lastZipOutCommPort( UTI PROMPI (ENGIN ) = "";
static char lastStateOutCommPort( UTI PROMPI (ENGIN ) = "";
static char lastCityOutCommPort( UTI_PROMPI_(ENGIN ) = "";
                                                                                                                                                                                                                                                                                                                                             static char bluePrefix( 6.1 a "00";
static char grangePrefix( 6.1 a "00";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static char origCityUser[ 128 ];
static char tmpCityUser[] = "tmpcty.use";
                                                                                                                                                    extern char stateAliasString[];
                                                                                                                      static char* sayPrompt() = (
                                                                                                                                                                                                                                                                                                                                                                                             static char userPathString( 256 ] * ".";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // STATIC VARIABLES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // DEFINE
                                                                                                                                                                                                                                  BOOL is Intiat = FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #define FEP_ENDOFOSPEECHTHRESH 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DgnSlideControl 
FARPROC lpfnIrain;
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hinstance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHOICE.CPP 10-26-95 3:18p slideControl;
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       m "ctall.vof";
m "alpha.vof";
m "system.voc";
m "olpha.vom";
m "system.voc";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hinstance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       =
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mich
En
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       we call OgnSlideControl::libMain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // hinstance must be initialized
20
25
                                                                                                                      short boot
                                                                                                                                                                                                                                                                                                               Ut (Channel
Ut (Channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Speechlask*
Recognizer*
** API (dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 8 8
                                                                                                                                                                                                   3
                                                                                                                                                                                                                                                                                                                                                                               // storage of Pattern
                                                                                                                                                                                                                                                                                                                                                                                                                              芸芸芸
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static SD_SIATE tmpState;
                                                                                                                                                                                                                      AlpheHypothesis
                                                                                                                                                                                                                                                                                  AlphanypoAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UttChernel*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Digwin variables and classes defined in the Digwin Class are made global.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Say: WakeUp",
"Say: Letters: a b ..",
"Say a word",
 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Purpose: Orives the application.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       regopp: *)
DigWin::chernel;
DigWin::sewError;
DigWin::fgnoreErrors;
DigWin::name = "Choice List App";
                                                                                                                                                                                                                                                                                                                                                                           recognized patterns and their distance DigWin::patternDistances(MAX_RECOG_CHOICES);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DigWin::hWnd;
DigWin::messageHandled;
DigWin::speechlask;
DigWin::recog;
                                                                                                                      OlgWin::wasListening;
OlgWin::fixError = 1;
OlgWin::numErrors;
OlgWin::wordPause;
                                                                                                                                                                                                                                    Digwin::alphaResult;
                                                                                                                                                                                                                                                                                                                                                                                                                         DigWin::firstChoiceArray(20)( 16 );
DigWin::nChoice;
DigWin::nPattern;
                                                                                                                                                                                                                                                                                                               DigWin::alphaUtt;
DigWin::wordUtt;
                                                                                                                                                                                                                                                                                 DigWin::alphaHypoAC( 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The member function onSpeech deals with the recognition of the zip code, state name and city name. It applies correction mechanisms when the proposed answers of the three components do not lock together.
                                                                                                                                                                                                   DigWin::atphaSpelting( UTI PROMPT LENGIN );
alphaSpeltingCarf UTI_PROMPT_LENGIN );
   35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 2 of 17
     40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // recognizer, wrapper around SD
     45
     50
```

```
SD WORD
SO WORD
SO WORD
SO WORD
SO WORD
SO WORD
SO WORD
SO WORD
SO WORD
                                                                                                                                                                                                                                                                                                                                                                                       static char* setFepPar( WORD id, char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  char
                                                                                              // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           static char* setUserPath( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      short
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // Purpose:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / CLASS CustomCitySL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Process Command Words and Provinces
 5
                                                                                                                                                                                                                                                                                                                                      ......
                                                                                                                                                                                                                                                                                                                                                                for( char "s = value; "s && !:sspace( "s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         stropy( userPathString, value );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for( char "s = value; "s && 'isspace( "s );
                                                                                                                                                                return "Par Nut Set";
                                                                                                                                                                                                                                                                                                         if( *value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            crror
                                                                                                                                                                                                                                                    v = (WORD )atol( value );
                                                                                                                                                                                                                                                                               MORO Y:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Digwin::buff UTT_PROMPT_LENGTH 1;
                                                                                                                                                                                                                      fep_Setpar( SUPER_USER, id, v );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Olgdin::cancelWord * 0;
Olgdin::bodlabelWord * 0;
Olgdin::goloSleepWord = 0;
Olgdin::wakeUpWord * 0;
Olgdin::sameZipWord * 0;
Olgdin::testState;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DigWin::stortThresh;
DigWin::endIhresh;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DigWin::appState;
10
                                                                          CHOICE.CPP 10-26-95 3:10p
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :: ;;
                                                                                                                                                                                                                                                                                                                                                                ••s );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // scratch buf
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // zips, city, s
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      static char* setEndOfSpeech( char* value )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static char* setNothing( char* )
                                                                                                                                                                                                                                                                                                                                                                                                                                   class findfilePath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                static char* setStartOfSpeech( char* value )
                                                                                                                                                                                                                       public:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Purpose:
                                                                                                                                                                                                                                                                                                                                                                                                           protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / class FindFilePath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      return 0;
   30
                                                                                                                                                                                                                                                                                                      char *pathString, *path;
char *fileSpec;
int attribflag;
                                                                                                                                                                                                                                                                                                                                                             static char defaultfath[];
static char defaultfileSpec[];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( setFepPar( FEP ENDOFOSPEECHTHRESH, value ) )
return "EndofSpeech Not Set";
                                                                                                                                                                'findfilePath()
                                                                                                                                                                                        findfilePath( char* fspec, char* p =0, int flag =fa_NORNAL );
                                                                                                                                                                                                                                                    bool fundfurstPrimitive();
                                                                                                                                                                                                                                                                               struct ffblk attrib;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             return 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( setfepPar( fEP_STARTOFSPEECHTHRESH, value ) )
return "StartOfSpeech Not Set";
                                                                                                                      if( pathString is defaultPath )
    delete pathString;
                                                                                           if( fileSpec != defaultFileSpec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             find file using PATH variable
   35
                                                                          Page 3 of 17
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                                                                                           -- امن حق الل
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<u>::</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                boal FindFilePath::findFirstPrimitive()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              findfilePath::findfilePath( char* fspec, char* p, int flag )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // Constructor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             char findfilePath::defaultfileSpcc() = **.**;
char findfilePath::defaultPath() = *1.10*;
                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                   ;
;;
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (or (;;)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           attribileg a flag;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               if( tspec )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char* filename() ( return attrib.ff_name; )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bool findfilePath::findfirst();
bool findfilePath::findWext();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fileSpec = new chart strient ispec ) + 1 ];
strcpy( fileSpec, ispec );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fspec = defaultFileSpec;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pathString = path = defaultPath;
                                                                                                                                                                                            path .= . strien( path ) . i;
                                                                                                                                                                                                                                  p = stpcpy( p, fileSpec );
                                                                                                                                                                                                                                                                                                            if( p>15pec && *(p-1) is ': && *(p-1) is '\\' && *(p-1) is '/'
                                                                                                                                                                                                                                                                                                                                           char* p = stpcpy( (Spec, path );
                                                                                                                                                                                                                                                                                                                                                                                                       cher' (Spec = new char( strien( path ) + strien( fileSpec ) + 2
                                                                                                                                                                                                                                                                                                                                                                                                                                           if( *path ** *\0' )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :.0\. . d...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            strcpy( pathString, p );
for( p = pathString; *p; **p )
if( *p == ';')
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  path = pathString = new chart strien( p ) + 2 ];
                                                                                                                                                         ill ifindfirst( fSpec, Battrib, attribiting ) )
                                                                                                                                                                                                                                                                     :,/. = ..d.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHOICE,CPP 10-26-95 3:18p delete fileSpec;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bool DigWin::oninitDialog( HWND hOlg, HWND, long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // initialisation function for Diguin class (NOT constructor)
// the global variable appState is set to ALPHA_STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              book FindFilePath::findNext()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bool FindFitePath:: findFirst()
                                                                                                                                                                       SendDigitenMessage( hDig, USA_COMBO_ID, CB_ADDSIRING, O, (ONDRD) fiPath.filename() );
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if( !findnext( &attrib ) )
    return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 return findfirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return findfirstPrimitive();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             path = pathString;
                                                                                                                                                                                                                                                                                                                             findfilePath ffPath( "*.un?", userPathString );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         speechlask = new Speechlask( name, reportError );
                                                                                                                                                                                                                                                                         // set up the usr listbox
if( ffPath.findfirst() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                   rep_Setpar( SUPER_USER, rep_Setpar( SUPER_USER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       speechlask->setPar( "track-mem", (short )!track );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           speechlask->getPar( "track-mem", &track );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  int16 track;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            )
delete fSpec;
                                                                                                                                                                                                                                                                                                                                                                    took out parseString
                                                                                                                                          while( ffPath.findWeat() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      delete fSpec;
return IRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Memory debug stuff
    35
                                                                                                                                                                                                                                                                                                                                                                                                       . 13. 87 );
12, 58 );
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SeruDigitemMessage( hDig, EMD_IMRESM_SLIDE_ID, LMM_SETSCROLLBANGE, 0, 0x0 e> 0700010L );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SendDigiterMessage( hDig, START_THRESH_SLIDE_ID, LM_SETSCROLLRANGE, 0, 0 ** x008000201 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ** 1000060L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // read in file with words char line (100); // char buffer[100]; //
                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Read in the list file while( fgets( line, 100, infile ) )
(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        file* infile = fopen( wordfiteName, "r" );
// Error checking
if (infile == MULL) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // global
errfile = fapent "letters.log", "o" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SendDigitemMessage( hDig, START_THRESM_SLIDE_ID, WM_SETSCROLLPOS, 0x0050
        5
                                                                                                                                                                 fcloset infile );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       char wordfileName() = "words.lst";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char spelling[50];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // initialize twoLetter words in ordered array to pointers of char
wordOc:init();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SendDigitemMessage( hDig, END_INRESH_SLIDE_ID, LM_SETSCROLLPOS, 0x0030,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SerxDlgitemMessage( hDlg, WORD_PAUSE_SLIDE_ID, WM_SETSCROLLPOS, 0x00a0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // speechlask->getPar( "computation", &compite );
speechlask->setPar( "computation", (short )15 );
// speechlask->setPar( "adapt-tolerance", (short )3 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Serv.DigitemMessage( holg, woon_PAUSE_Stide_ID, wm_SETSCROLLRANGE, 0, 0×0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              int 16 complete;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          appStore = word_STATE;
                                                                                                                                                                                                                                if (noSpecialWord)
// Load words in WordOC
WordOC::addWord( spelling );
                                                                                                                                                                                                                                                                                                                                                                                                                  sscanf( line, "Xs", spelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HessageBox( hund, buffer, "CHOICE app Error",
HB_TASKMODAL | MB_ICONSIDP | HB_OX );
                                                                                                                                                                                                                                                                                                                                       // do not deal with words with spaces etc for now
int noSpecialWord = WordOC::checkSpelling( strlwr( spelling ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EndDialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sprintf( buffer, "Unable to open file %s\n", wordfileName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return fALSE;
  10
                                                                                                                            CHOICE.CPP 10-26-95 3:18p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // time of fite
// for error message
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                                                                                                                                                   Sprech --> Board digitizes --> Multimedia (MM) layer discovers speech, and interrupts other Windows activities --> dragdev, the dll that deals with the front end (FEP), gets data from HM and decides whether we have speech or not(Utterance detection).

If so, dragdev stores the utterance in its queue and it also calls postSpeechEvent. This function was handed to the channel when we opened
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Caliback function, handed to the microphone channel when it was opened.
                                                                                                                                                                                                                                                                                                                                       its place in the control flow:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /* postSpeechEvent()
                                                                                                                                                                                                                                                                                                                                                                                      We do not process any data in this function. We want to get out of this interrupt as soon as possible.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Dragon speech driver error handler.
// Immediately after having
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         void DigMin::reportError( int code, char far *message )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 // ift stricmp( message, "Bod token" ) && strncmp( message, "Invalid
>> word handle:", 18 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           => 00 | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // load matrix into statics
Hypothesis: hypo = 0;
hypo = new( &Mypothesis::heap ) Mypothesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sawError = YES;
if( ignoreErrors )
    return;
ignoreErrors = YES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MessageBox( hWnd, buffer, "Choice SDAP1 Error",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Throw up an error message char buffer( 512 ); sprintf( buffer, "An error has occurred\n code = %d\n code, message );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // terminate... kill the hTopParentWindow
//if( hUnd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // smooth logs
hypo-vsmoothlogMatrix( "Permutation", NUMITEMS );
hypo-vsmoothlogMatrix( "Insertion", NUMITEMS );
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           return TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             //read in special cases
hypo->readSpecialFile( "special.txt" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // hard coded matrix name
hypo->readMatrixfile( "matrix.log" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gnoreErrors = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PostMessage( hand, um_close, 0, 0 );
  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // prevent recursion
                                                                                                                       Page 5 of 17
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NB_TASKWODAL | NB_TCONST
     45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           message = Xs",
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void Digwin::itsBod( HWND hwnd, UttChannel* toMe )
                                                                                                                                                                                                                                                                                                                                                                                                                                                              // Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        extern const char* ltoZip( long num );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   static long right=0, wrong=0, predicted=0, addressConfidence=100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #define HANDLE_UM_COMM_SEND_SYNC_MSG( hund, wParem, 1Parem, In ) \
((In)(hund, (Comm<sup>®</sup> )(Parem), IL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #define HANDLE UM COMP_CHECK_MSG( hwrd, wParam, {Param, fn } \ ((fn)(hwrd, (Comm* ){Param), "IL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #define HANDLE UN CHANNELSIARI(thind, wPeram, (Param, fn) \ ((fn)(hind, (SD_CHANNEL)uPeram), 1L)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VOID SD_CALLBACK _export DigHin::postSpeechEvent( SD_CHANNEL ch, SD_CHANNEL_EVEN as I eventin )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Make sure there is a start of utterance message for any utterance. It was observed that having utterance and the related utterance start message were out of sync. If PethMessage return false, we will make sure to put a UM_CHANNEL_START message in. This makes it more robust
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           message were out of sync. If PeekHessage return folse, we we make sure to put a UM CHANNEL_START message in. This makes to keep he number of utterances and CHANNEL_STARTs in sync.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A similar trick is applied in onSpeech() at EndOISwitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          After we leave the interrupt we send ourselves a PostRessage UM ChannelStart Mhen UM ChannelStart is processed we direct the application to the function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( 0 == Pechmessage( &msg, hund, UM_CHANNELSTART, UM_CHANNELSTART, PM_N
** OREMOVE | PM_MOTIELD ) )
//3*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CMDICE.CPP 10-26-95 3:18p the channel. In this way the microphone knows to use this caliback function to get into the application for recognition.
                                     5
                                                                                                                                                                                                            SetWindowlext( GetDlgitem( hund, CHOICE_LISI_ID ), "" );
                                                                                                                                                                                                                                                 SetWindowleatt GetOlgitem( hund, AIPHA_CHOICE_LIST ), "no recognition" )
                                                                                                                                                                                                                                                                                                            // Stijn suggests: bad counter can be set and brought to screen here.
// the zip state recognition failed.
recog->beept "bad.wav" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Basert( eventin == SO_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PostMessage( hund, UM_CHANNELSTART, (WORD )ch, 0 );
                          10
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                                                                                                                                                                                          void DigMin::onSpeech( HUND hund, SD_CHANNEL ch )
                                                                                                                                                                                                                                                 н
Н
                                                                                                                                                                                                                                                                                                                                                                                                                                 UneShotHeap Choice::heap( 4096 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , void DigWin::itsGoodAdapt( AlphaNypothesis& ah )
          30
                                                                                                                                                                                                                                                                                                         onSpeech is the heart of the solution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SetWindowText( GetOlgItem( hWnd, CHOICE_LIST_ID ), ah.spelling );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( count + += 4)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog->setChannel( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // lets adapt...
recog->setVoc( alphavoc );
recog->setChannel ( alphavit );
recog->setPrompt( ah.phrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recog->contAdapt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Do something here with good answer, maybe output via DDE client
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recog->giveAwayUtt( toMe );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             assert( zh->hasIntegrity() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  char rum( 20 );
ito8( write( write(ount )=computeMemoryUse(), rum, 10 );
SetWindowlext( GetDlgltem( hWrd, MEMORY_TEXT_(D ), rum );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            count = 0;
static writeCount = 0;
static long write[ 4 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( ++writeCount == 4 )
       35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             writeCount * 0;
file * fout * fopen( "memuse.log", "a*" );
if( fout )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fprints fout "XId\n" fprints fout "XId\n" fprints fout "XId\n" fprints fout "XId\n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Page 6 of 17
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  45
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m> RESETCONTENT, 0, 0);
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #> buf ), i );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _RESETCONTENT, 0, 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ETCONTENT, 0, 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100%
                                                                                                                                                                                                                                                                                                                            _(151_10, LB_ADDSTRING, 0, (DWDRO) buf);
                                                                                                                                                                                                                                                                                                                                                                                                                                      (i), but );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pice list around to be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // get the utterance handle; do not wait for the end of the
// utterance since the recognition can proceed in parallel
// with the utterance collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     static boot found = FALSE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // notify the dragcpp classes for speech event if( recog->notifyChannel( ch, SD_CHANNEL_START ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   assert( recog );
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // appState is initialized to WORD_STATE switch( appState )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Case WORD STATE:
10
                                                                                                      CHOICE.CPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SendDigitemMessage( hund, TEMP_STATE_LIST_ID, LB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SendDigitemMessage( hund, ALPHA_CHOICE_LIST, LB_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SendDigitemMessage( hund, CHOICE_LISI_ID, LB_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( 0 == recog->recog() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Get word vocabulary
recog->setVoc( cityVoc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SendDigitemMessage( hwnd, CHOICE_LISI_ID, LB_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     recog->setState( "Dictation");
                                                                                                                                                                                                       else (
                                                                                                        10-26-95 3:18p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // get top choice
for (int i = 0; i < recog·>resultCount()
                                                                                                                                                                                                                                             appState = ALPHA_STATE;
                                                                                                                                               appState = WORD_STATE;
                                                                                                                                                                                                                                                                                      recog->giveAwayUtt( &wordUtt );
                                                                                                                                                                                         recog·>killutt();
    15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // store first 2 choice list cho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recog->resultName( buf, sizeof(
                                                                                                                                                                                                                                                                                                                                                               // display top choice on screen SendDigitemMessage( hwnd, CHOICE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      if( i < 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // inserted later stropy( firstChoiceArray
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nChoice = i;
// keep patterns from ch
      20
          25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *> RESETCONTENT, 0, 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              => hrase();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               m> izeof( alphaResult.phrase ) );
                                                                                                                                                                                                                                                                                                                                                                                                                     streat(alphaSpellingCsr, " CSR" );
SencDiglienHessage( hand, TEMP_STATE_LIS
*> T_ID, LB_ADDSTRING, D, (DUDRO) alphaSpellingCsr );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E) ETCONTENT, 0, 0);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        => RESETCONTENT, 0, 0);
                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                    uscfinodZipPhrase = Mypothesis::build( re => cog, &siphaHypoAC, siphaResult, wasGoodZipPhrase, 150 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        => (ing, wasGoodZipPhrase );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Case ALPHA_STATE:
                    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ) // WORD_STATE break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alphaResult.spelling[ 0 ] * '\0';
alphaResult.phrase[ 0 ] * '\0';
alphaSpelling[ 0 ] * '\0';
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SendDigitemHessage( hund, TEMP_STATE_LIST_ID, LB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   // Get alpha vocabulary
recog-setVoc( siphaVoc );
// Get digitOcolor state
recog-setState( "start" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // reset variables to NULL and
// remove hypotheses from previous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // start recognition if( 0 == recognition() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SendDigitemMessage( hund, CHOICE_LIST_ID, LB_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SendDigitenMessage( hund, ALPHA_CHOICE_LIST, LB_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alphaHypoAC.removeAll();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int wasGoodZipPhrase = 0;
int numbords = 0;
                                                                                                                                                                                                                                                                                                                    if( wasGoodZipPhrase )
                                                                                                                                                                                                                                                                                                                                                         // Set state to zipcommandwords
recog->setState( "zipcommandwords" );
                                                                                                                                               // RE-RECOGNIZE against phrases.
// Recognition in Alpha Voc in zipcommandwords
//
                                                                                                                                                                                                                      //----
                                                                                                                Page 7 of 17
                        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alphaSpelling[ wasGoodZipPhrase ] = '\0'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recog->resultName( alphaResult.phrase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strcpy(alphaSpellingCsr, alphaSpelling)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strncoy( siphsSpelling, siphsResult.spel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // returns length of phrase wasGoodZipPhrase = alphaResult.initFromP
                             45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50
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5	=> adds the WORD_ID to the state	as gesword1d( wordSpelling )) as 0		as troubcol i l l:		*> S: _;+ )	;	* r():		*> c, bul );	stored in but		** cArray( 1 1, 3 );				a) ( ) (a 2 )		** WORD state		ev cognized word											•
10	the state	ling )) == 0 );																													ii( recos	CHOICE.CPP 10:
15					^	for( in	// Add	int num	// numb		WordOC:	<u> </u>	•	^	else		:	in ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	fact int i an	// nChoice set i	// for robustness	// get 3 letter	// Set new word state );	gase) (C. copococo //	// Assert new Word state	// Create new st	recog-setVoc( cityVoc	// Get word vocabulary	// temporary wor static WordOC *t	SD_WORD wordld = 0;	if( recog->recog() == 0	10-26-95 3:180
20	// buildNord builds and		int isNewword = reco	strcpy( wordSpelling, (*	char wordSpelling( 100 )	tjs0;jtnume	// Add words to temp state	int numberOfWords = tmpNoc->coun	// number of word with this pall		WordOC::getMatchingWords( tmpWo	// Get list of words for pattern	huf (3) = 0;	strncpy( but, firstChoic		stropyt out, ill structor		( ) if strien firstChoiceArray()	e officie. I	// nChoice set after first word recog in	ä	// get 3 letter pattern of originally re	impState );		rd state	// Create new state (mpState = recog->newState( "tmpWord" );	ityVoc );	bulary	// temporary wordOC static WordOC *tmpWoc = new WordOC();	0;	×	
25	1 (ds and		ld = reco	Iting, (*	ng ( 100 )	er0flord		loc - y coun	his pall			-	_		_	*(Choice	r Poice	rray( )	<b>:</b>	recog in		nally re		. <del></del> .	_	Word" );	<del></del> ·-		ő:		<b>-</b>	<del></del>
30	=> tance( i );	es ern, our s;	=> onces	•	as buf ), i );					2> dd words in from		Rendi 1		as vision state of the care				5	Ü	Ü	=> ge( hund,		<b>.</b>	<b>;</b>	Ü	a> ndDigitemMessage( hwnd.	=> wordld );	zo to the state		=> ge( hwnd, TEMP_STATE_LIST_10, LB_ADDSTRING,	; => ing, ****);	
35														2				0, (014080	LB_ADDSTRING,	IEMP_SIAI		,	o, (buoat	LB FINDSIRING		hand,				ווב"רוצו"וס' רפ"		740
40	. <u>-</u>		•			,	fort int	int penalty * 3;	nPattern	// words.ist	// inspec	recog. > ad	wordld =	// add fi	~			0, (DWORD) wordSpelling);	ARG.	TEMP_STATE_LIST_ID,			0, (DWDRD) wordSpelling) )		TEMP STATE LIST ID,					ADDSTRING, O		Page B of 17
45		as distance a cornerson	stropy( patternDistances[i].patt	// store patterns and their dist	recog->resultHame( buf, sizeof(	// fill buffer with recognizer's	i = 0; i < nPettern; ++i )	ty = 3;	nPattern = recog->resultCount();	ist	// inspect choice list of patterns and a	ddWord( wordId );	recog. >wordid( firstBuf );	irst choice of discrete recog in	The second second	// for HimberOflords	assert( wordld i= 0 );	ing); numbords++;				SendDigitemHessa	ing) u			if( LB_ERR == Se	recog.>addiord(	, and	else ( // add the word	0, (DWORD) wordSpelling); continue;	SendDigite	<pre>if( isNewNord ) {     strcat(wordSpell)</pre>
50		E		ir dist	izeaf	mizer's	•			•	s and a		.: 	ecog in			- -	. <b>.</b> .	-	-		MARCO S.D.	· ··				Hord(				gHesse	

	tt => ge( humd.    EMP_STATE_LIST_ID     10		
// constitues the distance belies  // it zero. The further on the 6  // it zero. The further on the 6  // it zero. The further on the 6  // it zero. The further on the 6  // it zero. The further on the 6  // constitues.  // panelly:  // panelly:  // panelly:  // panelly:  // panelly:  // panelly:  // panelly:  // display choice list of letter  // constitues.  // patternolitancesil.disi  // p	get hund.    TEMP_STATE_LIST_ID.	(B FINDSTRING,	
# constant   // conclines the distance belief   // conclines   // is aro. The further on the constant   // is aro. The further on the constant   // is aro. The further on the constant   // is a get hand.   Ispo SIME_LIST_D.   // ispossible.   // display choice list of letter   // display choice list of letter   // display choice list of letter   // fact list of words to remain   // fact list of words to remain   // fact list of words to remain   // fact list of words to remain   // fact list of words to remain   // fact list of words to remain   // fact list of words to remain   // fact words to remain   // fact words to remain   // fact words to remain   // fact words to remain   // fact words to remain   // fact words   //	tt => get hund.    TEMP_STATE_LIST_ID.	STATE STATE	
# worse	tt => ge( hurd.    TEMP_STATE_LIST_ID.	ndDigitemMessage( hund,	
# worse	tt ==> ge( hurd.    TEMP_STATE_LIST_ID.	wordid );	
// cometimes the distance betwee  // is zero. The further on the c  // is zero. The further on the c  // is zero. The further on the c  // complete cero  // complete cero  // complete cero  // complete cero  // diplay choice list of letter  // diplay choice list of letter  // diplay choice list of letter  // diplay choice list of letter  // diplay choice list of letter  // diplay choice list of letter  // cat list of words for pattern  // cat list of words for pattern  // cat list of words in templecticate  // number of word with this patt  //	tt ==> temp_STATE_LIST_ID.    temp_STATE_LIST_ID.     temp_STATE_LIST_ID.     temp_STATE_LIST_ID.     temp_state_list_ID.     temp_state_list_ID.     temploc.>remounting.     toa( numbords, numbers, nu		
// cometimes the distance blues // is zero. The further on the c // is zero. The further on the c // committy == 1; ponalty == 1	rec => get hund.    EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     Exp. (DUORD) wordSpelling     State		
// conclines the distance betwee   27	tt => get hurd.    EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     On		
// conclines the distance betwee  // is zero. The further on the c	the postate_tist_ID.    EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     EMP_STATE_LIST_ID.     Application   O, (DUDRD) wordSpelling     Setvindowlength     Setvi	as get manage command	
// conetimes the distance betwee	tt : => le_babosirinc,	ing."**"):	
# worse  // is zero. The further on the c  // is zero. The further on the c  // is zero. The further on the c  // is zero. The further on the c  // is zero. The further on the c  // is zero. The further on the c  // is zero. The further on the c  ** get hand.  ** get	=> ge( hurd.    IEMP_STATE_LIST_ID.   IB_ADDSTRING.   O, (DUORD) wordSpellir   O, (DUORD) wordSpellir   O, (DUORD) wordSpellir   O, (DUORD) wordSpellir   Static chi   itoa( num   setWindow   of ( num   setWindow   of ( num   setwindow   of ( num   setwindow   of ( num   setwindow   of ( num   setwindow   of ( num   setwindow   of ( num   of ( num   setwindow   of ( num	gove the second	
# worse  // is zero. The further on the c  // is zero. The further on the c  ponalty = 3; ponalt	=> ge( hund.    [EMD_STATE_LIST_ID.   [B_DDDSTRING.,   0, (DWORD) wordSpe   0, (DWORD) wordSpe   1	and the MORO ID to the state	
// cometimes the distance betwee   27	=> ge( hund.    EMP_STATE_LIST_ID.   B_DODSTRING.   County   County   County   County	daracog.vwordid( wordSpelling )) == 0 );	
// is zero. The further on the c => get hand.  // is zero. The further on the c => get hand.  // is zero. The further on the c => get hand.  // is zero. The further on the c => get hand.  // cet ponalty == 3;  // ce + ponalty;  else patternoistances(i).dist => 0, (buoRb) wordspelling  sercolgltemMessage(hand, ALPMA_  sercolgltemMessage(hand, ALPMA_  // cet list of words for pattern  sordic:getMatchingWords( tapMo  // number of word with this patt  // number/OfWords = tapMoc->coun  // Add words to temp state  // Add words to temp state  // Add words to temp state  // Add words to temp state  // Add words to temp state  // char wordSpelling! [100 ] => putation", (short 130 );  // char wordSpelling! => cognizer  strcpy( wordSpelling! (* ponit):  // char wordSpelling! (* ponit)	=> ge( hund.    TEMP_STATE_LIST_ID.   La_DDDSTRING.   DuORD) wordSpelli   O, (DuORD) wordSpelli   Static ch   itoa( num   so   state   It   so   putation", (short 130 );   O]   so   putation", (short 130 );   O]   so   cognizer		
// cometimes the distance betwee   => // is zero. The further on the C => ge( hurd. // is zero. The further on the C => ge( hurd. // is zero. The further on the C => ge( hurd. // is zero. The further on the C => ge( hurd. // penalty += 3; patternDistances(i).dist => patternDistances(i).dist => patternDistances(i).dist => // display choice list of letter // disp	=> ge( hund.    TEMP_STATE_LIST_ID.   La_DDDSTRING.   DuORD) wordSpelli   O, (DUORD) wordSpelli   Static ch   itoa( num   Pof_MORDS_ID). num4 ):   If   Pof_MORDS_ID). num4 ):   If   Pof_MORDS_ID). num4 ):   If   Pof_MORDS_ID)   Pof   If   Pof     If   Pof_MORDS_ID)   Pof   If   Pof     If   Pof_MORDS_ID)   Pof   If     If   Pof More		
# worse   // is zero. The further on the c	=> ge( hwrd.    TEMP_STATE_LIST_ID.   B_DDDSTRING.   D, (DWORD) wordSpelling   D, (DWORD) wordSpelling   Static children   SetWindow   Set	s; j)	
// is zero. The further on the c => ge( hund, remp_state_clst_lD.  // is zero. The further on the c => ge( hund, remp_state_clst_lD.  // is zero. The further on the c => ge( hund, remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) => remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == remp_state_clst_lD.  // construct == remp_state_clst_lD.  // construct == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == 0 ) == remp_state_clst_lD.  // construct == remp_state	=> ge( hund.    TEMP_STATE_LIST_ID.   La_DDSTRING.   DuORD) wordSpelli   O, (D		<del></del>
// sometimes the distance betwee   =>  // is zero. The further on the C	=> ge( hund.    TEMP_STATE_L!    ->   LB_ADDSTRING.    ->   0, (DWORD)   wa    ->   0, (DWORD)   wa    ->   0, (DWORD   wa   wa    ->   0, (DWORD   wa    ->   0, (DWORD   wa    ->   0, (DWORD   wa    ->   0, (DWORD   wa    ->   0, (DWORD   wa    ->   0	ern	
// cometimes the distance betwee   =>	=> ge( hund.   [EMP_STATE_L	c, but );	
// sometimes the distance betwee   =>  // is zero. The further on the C	=> ge( hurd.   [EMP_STATE_L]	stored in buf	
// cometimes the distance betwee   =>  // is zero. The further on the C => ge( hard,   TEMP_STATE_LIST_ID.    ** permatty == 3;   =>   ( penalty == 3;   patternDistances[i].dist   =>   0, (DUDRD) wordSpelling);    ** patternDistances[i].dist   =>   0, (DUDRDISTANCes[i].dist   =>   0, (DUDRDISTANCes[i].dist   =>   0, (DUDRDISTANCes[i].dist   =>   0, (DUDRDISTANCes[i].dist   =>   0	=> ge( hurd.   EMP_STATE_LIST_ID.  B_ADDSTRING.  ->   0, (DUORD) wordSpelling);  ->   0	*> CHOICE_LIST, LB_ADDSIMING, C	-
// sometimes the distance betwee   =>  // is zero. The further on the C => ge( hund,   TEMP_STATE_LIST_ID.    // is zero. The further on the C => ge( hund,   TEMP_STATE_LIST_ID.    // is zero. The further on the C => ge( hund,   TEMP_STATE_LIST_ID.    // construction   =>   TEMP_STATE_LIST_ID.	=> ge( hwrd.    EMP_STATE_LIST_ID.   B_ADDSTRING.   O, (DWORD) wordSpelling):   O	strings on screen	
// sometimes the distance betwee   =>  // is zero. The further on the C => ge( hund,	=> ge( hwrd,   EMP_STATE_LIST_ID,   B_ADDSIRING,  Company	ance a distance;	-
// sometimes the distance betwee ! =>  // is zero. The further on the c => ge( hund,	=> ge( hund.  IEMP_STATE_LIST_ID.  18_ADDSIRING.  2>  0, (DUDRD) wordSpelling): 0 esserti		
// sometimes the distance betwee the contract of the contract	=> ge( hwrd,    [EMP_STATE_LIST_ID,    B_ADDSTRING,    O, (DUDRD) wordSpelling);		
// sometimes the distance betwee the system of the contract of	=> ge( hurd, rewp_STATE_LIST_ID, => LB_ADDSTRING,	penalty == 3; patternoistances ii	
// sometimes the distance betwee   => // is zero. The further on the c => ge( hund,   TEMP_STATE_LIST_ID.	=> ge( hund.   IEMP_STATE_LIST_ID.	· i Ni	
	-		
	- 17	// sometimes the distance b	

10	as hoice ):	a distance . 120;	***		so word, but );	av new( Sheap ) Choice();		my recog-yresultDistance( n );					a) tem	The state of the s	av hoice );	patterroistances(n).distance;	as distance +	•	es word, buf );	ay new( Aheap ) Choice();		my recog-presultaistance( n );	strien( patternDistances(n).pettern ))	patterroistances(n).pattern,	** f,	m n c nPollern; nee )	sy itern and add distance		er of buf, sizeoff buf ), i );	or ords to the screen	: er; ::1 )	CNOICE.CPP 10-26-95 3:18p
20																							_									
25		choicePO.push( c	choice-vscore =	// 150 is penalt	and the state of		Choice "choice "	ini distance :	( ! found )	) // nPattern	break; ) // if( stremp	found = IRUE;	// choice list i	// break out of	choicePa.push( c			choice->score =	stropyt choice.		Choice *choice =		distance =			iff istrncmpt bu	for( int n = 0;	// search for pa		recog->resultNam	// print those w	
30		<pre>s&gt; wordSpetting, (*tmpWoc)[ j ] );</pre>	=> dSpelling( 100 );		** er < 9 )		:> j = 0; j < numb	ar ords to choice list	av erOfWords = (mpWoc->count();	er r of word with this pattern		=> getMatchingWords( tmpHoc.	** ist of words for	z> ordOC *tmpWoc = new WordOC();	as mocro, a site, and a		er f not 10 words		as oice list		ŧ	.,	**	** , CHOICE_LIST_10.		as bottom of stack	=> Creen					
35		*tmpWoc3[ j ] ];	. <del>.</del>				j = 0; j < numberOfWards; j++ )	ist	oc-scount();	his pattern		( tmplioc,	** ist of words for pattern stored in buf	new WordOC();		•					(DUORD ) choicePO[ number ] ->word);	٠	LB_ADOSTRING,									Page 10 at 17
40		٠.									و ن	•									er I ->				٠.		. •					7
45	•		strapyl	cher wor	•	if( numb	^	for int	// Add w	int numb	// numbe	1	WardOC::	// Get 1	( static W	for ( int k .	if( number < 9 )	// fill up choice list i	number = i;	// number of words on ch	word);				SendDialterHessage( hund	while( number·· )	// Best words are at the	i = number-1; // Put final choice on s	) // for number	TOURS - TACSC,	·	
50			¥	ğ		Š		ž.	<u>x</u>	\$	ğ		<u>ጽ</u>	- -	ê.	2	_	<u>-</u>		3 					ž		₹ 	<u>:</u>				

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5			: :	er rned choice list,		a> ( )15 );			;	•	ţ	** ' CKOICE_FISI_10'				as readyearths,		**	=> fWords	:		■> break;	ex number < 9 )	•		\$	•	<ul> <li>sencial gitemMessage( hwnd,</li> </ul>	5	5	•	** RR ** SoreDigitonMessage( hund
10		CHOICE.CPP		**.	•				(DUDAD ) "no recognition");	0.	LB_ADDSTRING,	O,													O, (DMONO)	LB_ADDSTRING,	CHO1CE_L181_10,	age( hwnd,	O, (DUORD)	LB_FINDSTRING.	CHOICE_LIST_ID.	emMessage( hwnd,
15		10-26-95 3:180	addressConfidenc	// built up in a	// class recogni	speechfost vsec	// reset to 15	)// if (numblerds)	gnition");				else	J											0, (DWORD) wordSpelling);	ING,	57_10,		0, (DWORD) wordSpelling) )	ZING.	ST_10.	
20			<pre>addressConfidence * recog.&gt;confidence();</pre>	// built up in decreasing confidence ord	// class recogniter knows about the retu	var ( "Computation"	// reset to 15	numbords = 0;				Selection Commesses		// recog->recog()	) // for ( k )	<u>ح</u>	~	if( number >= Y		) // for number0	2	9	<u>.</u>	Ţ								=
25			ence();	nce ord	he retu	, (\$110)	} -		_			-			- -	break:	tmplioc ->	· ·	•	inbero	maker **			) // i/(		••				. —		ift tB_E
30			EndOfSwitch:			:	* CT ** )·	and the second		case			es igne	99	•					as ds state	3	so see well				=> , t8_ADDSTRING, 0, (DWDRD ) alphaSpelling);	=> ters					me do not trust answer
35				breat;						CASE WAKEUP_STATE:	// We an	4	// speec	// for a	// HOM #	break;	) // cas							_		( DWORD )						à
<del>1</del> 0		Page 11 of 17			recog->killutt();	appState = ALPHA_STATE;	SetWindowText( Get	recog.>beep( "awake.wav" );	SetWindowText( GetI	Ē.	// We are sleeping, and expecting to wake up. // Re initialize text on screen.	•	// speech is beard we will !	new message from I	we are out of the me		) // case ALPHA_STATE		recog->setState( "zipcommandwords" );	// Remove the 40 hy	recog->setVoc( alphaVoc );	// clean up, change	// else recog failed!!!	) // if (recog->recog()) on alpha voc	appState =	alphaSpelling);	SendDigiter	// bingo: dl	// clean up temp state recog->deleteState( tepState );	` • • • • • • • • • • • • • • • • • • •	· in	// If the confidence is tow if( addressConfidence < 4 )
	٠					IATE;	Digitem( )	. wev" );	Digitem (h		creen.		۶ ت	he FEP to	essage loo			3	ipcomend	potheses	avoc );	back to	=	:0g(C) on	HORD_STATE;		Nessage(	isplay ou	testate( )	e e	Bed( hand	onfidence Confidence
45							SelWindowText( GetDigitem( hund, ALPHA_CHOICE_LI		SetWindowText( GetDigitem( hund, CHOICE_LISI_ID		o same up.		be in the state CITY STATE.	// for a new message from the FEP for speech. The next t	sage loop. Our app in waitin			,	hords" );	// Remove the 40 hypotheses in the zipcommenduor		// clean up, change back to alpha you where phra		alpha voc	ë,		hand, CHOICE_LIST_ID	Isplay our best guess for let	tapState );		itsBedt hand, &alphautt );	<pre>// If the confidence is lower than 4, we if( addressConfidence &lt; 4 )</pre>
50			<b>T</b>	نئ∓			<del>-</del>			_				<u>-</u>	- —	•					-		•						-			

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yold DigWin::onSysCommend( MUND hund, UINT cmd, int, int )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      yold Digwin::onCommand( HWND hund, UINI cmd, KWND, UINI )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Function that organizes the user interface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // we always get to this end switch Setwindowiext( GetDigitem( hund, CONFIDENCE_TEXT_ID ), iion( mkd is ressconfidence, buf, 10 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    # C of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          so pState ) );
  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   case ALPHA_CHOICE_LIST:
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     switch ( cmd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             switch( cmd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             case SC CLOSE:
    EndDialog( hund, 0 );
    break;
                                                                                                                                                                                                                                                                                                                         case ExiI BIN IO:
Endbialog( hund, 0 );
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              case SAVE_BIM_ID:

if( recog && channel && recog.>getUser() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         case USR_COMBO_10:
break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         case CMOICE LIST_ID:
break;
                                                                                                                                                                                                     case TRAIM BIM ID:

// the function (pintrain has been initialized during processing
// of un CREATE in Applin::onCreate
if (cityUser 1= 0)
                                                                                                                                                                                                                                                                                                                                                                                                                          break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Setwindowlext( GetDigitem( hund, PROMPI_IEXI_ID ), sayPrompt[ ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // utterance message, put a start message in the queue.
if( recog-speekutt() )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // In case there is still another utterance, but we have no star
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  postSpeechEvent( (SD_CHANNEL )1, SD_CHANNEL_START );
                                                                                                                                                                                                                                                                                                                                                                                                                                                            recog->saveUser( origCityUser );
cityUser = origCityUser;
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            channel -> flush();
                                                                                                                                                                                      recog->closeUser( cityUser );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHOICE.COP 10-26-95 3:15p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
                                                                                                                                                                                                                                                                                                  MessageBox( hand, "Could not open either a alfa.voc or ctall.voc or user file!",
  30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          case PURCE BIN 10:
// Get rid of previously assigned memory blocks
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             freeProcInstance( lpfnfrain );
                                                                                                                                                                                                                                                                      Digvin::name, MB_ICONEXCLAMATION | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DialogBox( hinstance, "TrainDialog", hWnd, (DLGPROC) ipinirain )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 iff speechlask
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HCURSOR hCursor = SetCursor( LoadCursor( 0, 10C_WAIT ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( wasListening )
    charmel->listen( FALSE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        int wasListening = hadListened && channel-visListening()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                int hadlistened = channel 1= 0 && recog != 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alphautt.killutt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          speechlask = new Speechlask( name, reportError );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                delete speechlask;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    if ( had i is temed )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ill hadListened )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   if (channel)
  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             f( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    delete recog; recog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       delete channel;
channel = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recog->savedser( tmpCitydsr );
citydser = tmpCitydsr;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               channel = new WindowstiveChannel( "init.txt" );
                                                                                                                                                                    // handle the callback function to the fEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recog a new Recognizer( channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page 12 of 17
                                                                                                                                                                                                                                    Enabialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                   recog-setuser( cityUser ) == 0 ||
recog-setvoc( alphavoc ) == 0 ||
recog-setvoc( cityVoc ) == 0 )
    40
      45
      50
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;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'm' == ( <=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             er (usrkame) ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            av recognizer
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COSO SE JUSER BIN 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bool isMale a tolower( usrName[ strlen( usrName ) - 1 ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCURSOR hCursor = SetCursor( LoadCursor( 0, 10C_WAII ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( iGetDlgftemText( hund, USR_COMBO_ID, usrName, sizeof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               char usrkome [ UTI_PROMPT_LENGIN ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( recog )
10
                                                                                           CHOICE.CPP 10-26-95 3:18p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         extern int fileNameCmp( const char *, const char
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                char buffer{ 128 |;
recog. getUsername( buffer, sitrof( buffer ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if( fileNameCmp( usrName, buffer ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                if( wasListening )
     channel->listen( TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     // class deats with all this
channel-vopen( postSpeechEvent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Look in dragcpp.cpp for more details how the
                                                                                                                                                                                                                                                                                                                                                                                                          cityUser = origCityUser;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // Turn mic off temporarily if( wastistening ) channel->(isten( FALSE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bool wastistening = charmet->ististening
                                                                                                                                                                                                                                                                                                                                     if ( ismale )
                                                                                                                                                                                                                                                                                                                                                                       strepy( cityUser, usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                            recog-velosevoc( cityVoc );
recog-velosevoc( alphavoc );
recog-velosevser( cityUser );
15
                                                                                                                                                                                    alphavoc = femalphavoc;
cityvoc = femCityvoc;
                                                                                                                                                                                                                                                                                alphavoc = malalphavoc;
cityVoc = malCityVoc;
                                                                                                                 recognisetUser( cityUser ) == 0
20
25
                                                                                                                                                                                      *:10
                                                                                                                                    ÷
                                                                                                                                                                                                                                                                                                                  WessageBox( hand, "Could not open either digits.voc or ctall.voc or user file!",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #
∵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;(")x ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ű
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            i1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ** n either alfa.voc or ctall.voc or user file!",
                                                                                                                                TRUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     =
  30
                                                                                                                                                                                                                                                                                          Olgwin::name, MB_ICONEXCLAMATION | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DigWin::name, MB_ICONEXCLAMATION | MB_OK );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ~ else
    35
                                                                                                                                              // set parameter to collect wave forms speechlask->setPar( "collect-waveform", (short )
                                                                                                               speechlask->selPar( "save-waveform", (short ) TR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Get the channel
if( channel == 0 )
    channel = new WindowstiveChannel(usrWane)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Get the channel
if( channel == 0 )
    channel = new WindowstiveChannel("inst.t
                                                                                                                                                                                                   charmel - popen( postSpeechEvent );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stropy( cityUser, usrName );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                // define new recognizer channel );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // recug == 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Load male vocabulary
if( islate )
                                                                                       Page 13 of 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // Load framie vocabulary
                                                                                                                                                                                                                                                          EndDialog( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alphavoc = malelphavoc;
cityvoc = maleltyvoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alphaVoc = femalphaVoc;
cityVoc = femCltyVoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // reset to on after loading
if( westistening )
channel->tisten( TRUE );
                                                                                                                                                                                                                                                                                                                                                                                      recog-setVoc( eityVoc ) == 0 |
recog-setVoc( eityVoc ) == 0 |
recog-setVoc( cityVoc ) == 0 )
        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : recog->setVoc( cityVoc ) == 0 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Enabliating( hund, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recog->setVoc( elphaVoc ) ** 0
        45
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mendit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ** SETUSER_BIN_ID ), FALSE );
                                                                                                                                                                                                                                                                                                                                       a> SIRING, 0, (DWORD )buf );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ** recog-vististening() ? "Exicrophone On" : "Exicrophone Off" );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ** ID, O );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ** E_ID, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ** ID, 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ** 0 ), 1RUE );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *> EICONIENT, 0, 0 );
                                                                                                                                                                                                                                                                      ** STRING, 0, (DWORD )buf );
                                                                                                                                                                                                                                                                                                            => 0°wrong)/total );
                                                                                                                                                                                                                                                                                                                                                                              e> O*right)/total );
                                                                                                                                                                                                      as STRING, 0, (DWORD )buf );
                                                                                                                                                                                                                                         => , (100°predicted)/total );
 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         case MICROPHONE BIM 10:
// if there is a recognizer
if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SetWindowText( GetDigitem( hund, MICROPHONE_BIN_10 ),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         char num( 20 );
Itoa( computeMemoryUse(), num, 10 );
SetWindowlext( GetDigitem( hund, MEMORY_IEXT_ID ), num )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SetCursor( hCursor );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          // boolean behaviour ON or Off
recog->listen( frecog->isListening() );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // When microphone is turned off if( irecog-vististening!) >
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHOICE.COP 10-26-95 3:18p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Enablewindow: GetDigitem( hund, MICROPHONE_BIN_I
                                                                                                                                                                                                                       SendDigitemMessage( hund, CHOICE_LIST_ID, LB_ADD
                                                                                                                                                                                                                                                          sprintf( buf, "predicted: Xld Xld\X", predicted
                                                                                                                                                                                                                                                                                           SendDigitemMessage( hund, CHOICE_LIST_ID, LB_ADD
                                                                                                                                                                                                                                                                                                                                                              SendDigitemHessage: hwnd, CHOICE_LISI_ID, LB_ADD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SendDigitemMessage( hund, CHOICE_LIST_ID, LB_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POSTMESSAGE ( hund, LM_COMMAND, END_THRESH_SLIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PostMessage( hund, UM_COMMAND, START_THRESH_SLID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POSTMESSABE( hund, UM_COMMAND, WORD_PAUSE_SLIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Setfocus( GetDigitem( hund, WORD_PAUSE_SLIDE_ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           numérrors = 0;
                                                                                                                                                                                                                                                                                                                                sprintf( buf, "urong:
                                                                                                                                                                                                                                                                                                                                                                                                                                if( total = right + wrong:
if( total = 0 ) total = 1;
                                                                                                                                                                                                                                                                                                                                                                                               sprintf( buf, "right: Xld Xld\X", right, (10
                                                                                                                                                                           Killlimer( hund, VUIIMER_10 );
 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EnableWindow( GetDlgItem( hwnd,
                                                                                                                                                                                                                                                                                                                                XId XId\X", wrong, (10
20
 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      wordPause = GetScrollPost GetDigitemt hund, WORD_PAUSE_S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 if( speechlosk )
;
, (short )wordPause );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ů
                                                                                                                                                                     endthresh * GetScrollPost GetOlgitemX hund, END_THRESH_S
                                                                                                                                                                                                                                                                                                     .
                                                                                                                                                                                                                                                                                                                                                                                                                                                     s> r(Thresh );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ** TOF SPEECHTHRESH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     etartibresh = GetScrollPos( GetDigitem( hwrd, START_THRE -> SM_SLIDE_ID ), SB_CIL );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                $ (a );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>..</u>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Case WORD_PAUSE_SLIDE_ID:
   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CBSC START_THRESH_SLIDE_ID:
                                                                                                                                                                                                                         COSE END_INRESH_SLIDE_ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page 16 of 17
// mic is listening
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool wastistening = ( recog to 0 & recog-visitistening()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bool westistening = ( recog != 0 && recog->ististening()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cher num[ 20 ];
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    il( washistening )
                                                                                                                                            bool wastistening = ( recog != 0 && recog->ististening()
                                                                                                                                                                                                                                                                                                                                                                                      char num( 20 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( speechlask )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SetWindowText( GetOlgItem( hund, WORD_PAUSE_TEXT_ID ), n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  itoa( wordPause, num, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          if( washistening )
                                                                                                                                                                                                                                                                                                                    SetWindowText( GetOlgItem( hund, START_THRESM_TEXT_ID ),
                                                                                                                                                                                                                                                                                                                                                     itoa( startThresh, num, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             if( washistening )
                                                                                                                                                                                                                                                                                                                                                                                                                          if( wastistening )
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SetTimer( hund, WITHER_ID, 20, (TIMERPROC )0 );
         40
                                                                                                                                                                                                                                                                                                                                                                                                                          recog->listen( 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rep_Setpar( SUPER_USER, FEP_STAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recog->listen( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recog->(isten( ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        speechlask->setPar( "word-pause"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recog->(isten( 0 );
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void Diguin::onTimerDrawWU( NUND hund, UINT id )
(
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ü
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          *> FOSPEECHTHRESH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (f( id == VUTIMER_ID && channel && channel->isListening() )
   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   break;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUND how a GetOlgitem( hund, VUMETER_ID );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fep_Status( (800t. )&test, &fepinfo );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEP_S_SIAIUS tepinto;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RECT rc;
                                                                                                                                                                                                                                                                                                                                                                                          unit = (rc.right - rc.left) / fepinfo.max_level;
                                                                                                                                                                                                                                                                                                                                                                                                                          int moiseright, speechleft, speechright, unit;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GetClientRect( hvu, &rc );
                                                                                                                                                                       SelectObject( hdc, hOldBrush );
                                                                                                                                                                                                     Pectangle( hdc, re.left, rc.top, noiseright, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                          noiseright = speechleft = unit * fcpinfo.noise_level;
                                                                                                                                           DeleteObject(hBrush);
                                                                                                                                                                                                                                         HBRUSH hOldBrush = (HBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                             // draw speech
HBRUSH hBrush = CremteSolidBrush( RGB( 255, 0, 0 ) );
                                                                                                                                                                                                                                                                                                                          speechright a unit * fepinfo.speech_level * speechleft;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               NDC hdc = GetDC( hvu );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               re.left = 95;
re.right = 95 + 61;
re.top = 116;
re.bottom = 116 + 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         il( speechlask )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SetWindowText( GetDigitem( hund, END_THRESH_TEXT_ID ), n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      itoat endihresh, num, 10 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cher rum( 20 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( washistening)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           if( washistening )
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                                                                                                   CHOICE.CPP 10-26-95 3:18p
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recog->listen( 1 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fep_Setpar( SUPER_USER, FEP_ENDO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   recog-visten( 0 );
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MORD ) end
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               void DigWin::onDestroy( HUND hund )
                                                                                                                                                                                                                                                                                  BOOL FAR PASCAL _export Digwin::wncProc( HUND hwnd, UINT message, UPARAM wPeram, av [PARAM iParam ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rend I
                                                                                                                                                                                                                                                                 messageMandled = TRUE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     if( speechlask )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KillTimer( hund, VUTIMER_ID );
                                                                                                                                                                                                                                 tong returnValue = 0;
 30
                                                                                                                                                                                                   switch( message )
                                                                                                                                                                                                                                                                                                                                                                                                                      PostQuitHessage( 0 );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         // draw speech
hBrush = CreateSolidBrush( RGB( 0, 255, 0 ) );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rectangle( hdc, speechleft, rc.top, speechright, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        holdBrush = (KBRUSH )SelectObject( hdc, hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            if( channel )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                wordUtt.killUtt();
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ReleaseOC( hvu, hdc );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             // Background
Rectangle( hdc, speechright, rc.top , rc.right, rc.bottom );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DeleteObject( hBrush );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SelectObject( hdc, hOldBrush );
                                                                                                                                 handleMessage( LM_DESIROY, hund, wParam, IParam, orDestroy );
                                                                                                                                                               handleHessage( LM_INIIDIALOG, hund, wParam, IParam, onInitDialog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       delete speechlask;
speechlask = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              if( recog )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               delete recog; recog = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               delete channel;
channel = 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            // Print recorded stats on letter strings to file
choicelistStats.printStats();
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int PASCAL Wirmsin( HINSTANCE binst, HINSTANCE brevinstance, LPSTR lps2Emdline, av int /° rCmdSbow °/ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HILLIANIAN INTERNATIONAL AND ADDITIONAL AND ADDITIONAL AND ADDITIONAL AND ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADDITIONAL ADD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Static Global Variables of AppMin
H/MD AppMin: hbrd;
H/MSK AppMin::hlesk;
bool AppMin::messageHandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           class Applin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  // Purpose : application driven from this class
// WinMain will call underso of Appwin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protected:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // CLASS Appuin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         static bool onCreate( HUND hWnd, CREATESIRUCI FAR* (pCreateStruct );
static void onDestroy( HUND hWnd );
static void onClose( HUND hWnd );
static void onClose( HUND hWnd );
static void onCommand( HUND hWnd, UINI cmd, HUND x, UINI y);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               static HVND hund;
static HTASK hTask;
                                                                                                                                                                                                               SetMessageOveue( 64 );
                                                                                                                                                                                                                                                                                    static const char name() = "Barbados spell mode";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     static bool messageHandled;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               friend int PASCAL WinMain( HINSTANCE, HINSTANCE, LPSTR, int );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             static long FAR PASCAL _export wndProc( HUND, UINT, UPARAM, LPARAM );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // undProc() services
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                return messageHandled 7 returnValue : 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   handleMessage( LM_CHANKELSTART, hwnd, wParam, (Param, onTimerDravVU );
handleMessage( LM_CHANKELSTART, hwnd, wParam, (Param, onSpeech )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHOICE.CPP 10:26-95 3:18p
handleMessage( LM_CUMMAND, hund, wPorom, 19arom, onCommond );
handleMessage( LM_SYSCOMMAND, hund, wPorom, 1Parom, onSysCommond
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                                                                                                                                                                                                                                                                                                                                                                                              void AppWin::onCommand( HWMD hWrd, UINT cmd, HWMD, UINT )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Application Helper function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                => DOW | WS_CLIPCHILDREN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   *> QN ) );
                                                                                                                                                                                                                                                                                                                                                             switch ( cmd )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Showlindow( AppWin::hWnd, SW HIDE );
// Showlindow( hWnd, nCmdShow );
// UpdateWindow( hWnd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MSC msg;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          return msg. wearam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ::hinstance = hinst; // the global hinstance for the sliderctl
slideControl.libNaininit(); // register the slider class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  while (GetHessage (Lmsg, 0, 0, 0 ) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           assert( hWnd == AppWin::hWnd );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMD hund = CreateWindow( name,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        if( !hPrevInstance )
(
                                                                                                                                                                                                                                                                        CASE UN INIT_DIALOG:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           undclass.hCursor = LoadCur

// undclass.hCursor = Load

// undclass.hCursor = Load

undclass.hDrBackground = 0;

undclass.lpszClassName = name;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           undcless.style
undcless.lpfn/mg/roc
undcless.cbClsExtre
undcless.cbClsExtre
undcless.hinstance
undcless.hinstance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TranslateMessage( Lmsg );
DispatchMessage( Lmsg );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RegisterClass( &undclass.);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HNDCLASS undclass;
35
                                                                                                                                                                                                               // create dialog box proc instances for use later
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 16 of 17
    40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            toadCursor( 0, 10C_ARROW );
# toadCursor( 0, 10C_ARROW );
* toadCursor( 0, 10C_ARROW );
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CS_HREDRAW | CS_VREDRAW;
Appwin::wndProc;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hinst;
Loadicon( 0, MAKEINTRESOURCE( IDI_MY_IC
        45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CY_USEDEFAULT,
CY_USEDEFAULT,
CY_USEDEFAULT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME, US_OVERLAPPEDUIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hinst,
ips:CmdLine );
    50
        55
```

5 10 15 20	messageHandled = FRUE; CMOICE.CPP 10-26-95 3:18p	// Application message handler called from wirMain function long FAR PASCAL_export Appwin::wndProct NUMD hund, UINT message, UPARAM wParam, PARAM IParam )	Destroywindow( hand );	// Application Helper function void AppWin::anClose( MAND hWhd )	void Applin::onMCDestroy( MWND ) { }	// Application Helper function	<pre>void AppMin::orDestroy( MAND ) {     PostQuitMessage( 0 ); }</pre>	// Application Halper function	) return TRUE;	PostMessage( hund, MM_COMMAND, UM_INIT_DIALOG, 0 );	hTask = GetCurrentTask(); hund = hund:	bool Appuin::onCreate( HAND hard, CREATESTRUCT FAR* ) (	// Application Helper function		messageHandled a FALSE;		break :	DialogBox( hinstance, "ChoiceDialog", 0, (DLGPROC )ipin  ** );  PostMessage( hund, LM_CLOSE, 0, 0 );	essert( (pin );	static fARPROC (pin = MakeProcInstance( (FARPROC )Digvin => ::undProc, hinstance );
3 <b>0</b>			<del></del> =									_	=> '(Peram ) );	ret		ę.	-	<b>"</b>	C SX:	lon
<i>35</i>	Page 11											:		return( messageNandled	break;	default: messageMandled = FALSE;	handleMessage( WM_COMMAND, hwn		switch( message ) (	long returnValue = 0;
•	17 of 17			÷.		. :	·						: DefWindow			٠	٠ ۾	E, hund, wParam, DY, hund, wParam TROY, hund, wPar		
45													: DefWindowProc( hand, message,	•			(Param, or m, (Param,	(Param, or , (Param, o am, (Param,		
50	<u> </u>	Der (2)											sage, wParam,				onClose ); a, onCommand );	onCreate ); onDestroy ); m, on#CDestroy )		

### Claims

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- 1. A method of speech recognition including:
  - recognizing a first utterance.
    recognizing a second utterance having information that is related to said first utterance. and
    determining the most probable first and second utterances based on stored information about valid relationships between possible first and second utterances.
- The method of claim 1 further including determining validity of one of the recognized utterances and including an
  invalid utterance in a list of possible utterances for comparison with possible utterances in said list.
  - 3. The method of claim 1 wherein determining the most probable utterances includes rerecognition of one of said utterances against a list of possible utterances.
  - 4. The method of claim 3 further including ranking said list of possible utterances based upon how closely each of the possible utterances corresponds to said one of said utterances.
- 5. The method of claim 1 further including creating an hypothesized list of possible utterances that relate to at least one of said recognized utterances based on said stored information.
  - 6. The method of claim 5 further including ranking a list of possible utterances based upon how closely each of the possible utterances corresponds to one of said utterances and comparing said ranked list of possible utterances to said hypothesized list of possible utterances for commonality between said lists.
  - 7. The method of claim 1 further including creating an hypothesized list of possible utterances that relate to at least one of said recognized utterances based on said stored information.
- 8. The method of claim 1 further including creating a list of possible utterances that could be confused with at least one of said recognized utterances.
  - 9. The method of claim 1 wherein said recognized first utterance is recognized continuously.
  - 10. The method of claim 1 wherein said recognized second utterance is recognized discretely.
  - 11. The method of claim 9 further including creating a list of possible first utterances that may be confused with said recognized first utterance.
- 12. The method of claim 11 further including creating an hypothesized list of possible second utterances that relate to said possible first utterances based on said stored information.
  - 13. The method of claim 12 further including adding said recognized second utterance to said hypothesized list of possible second utterances to create a merged list of possible second utterances.
- 14. The method of claim 13 further including rerecognizing said merged list of possible second utterances against said second utterance to get a ranked list of possible second utterances, said ranking based upon how closely each possible second utterance in said merged list corresponds to said second utterance.
- 15. The method of claim 14 further including comparing said ranked list of possible second utterances to said hypothesized list of possible second utterances for commonality between said lists. said highest ranked possible second utterance in said ranked list being compared first.
  - 16. The method of claim 15 further including creating an hypothesized list of possible first utterances from said second recognized utterance based on said stored information.
  - 17. The method of claim 16 further including adding said recognized first utterance to said hypothesized list of possible first utterances to create a merged list of possible first utterances.

- 18. The method of claim 17 further including rerecognizing said merged list of possible first utterances against said first utterance to get a ranked list of possible first utterances having a ranking based upon how closely each possible first utterance in said merged list corresponds to said first utterance.
- 19. The method of claim 18 further including evaluating a possible first utterance ranked second in said ranked list of possible first utterances by determining whether a distance parameter associated with said second ranked possible first utterance is within an acceptable limit.
- 20. The method of claim 19 further including indicating to a user when said second ranked possible first utterance is not within said acceptable limit and no commonality exists between said ranked list of possible second utterances and said hypothesized list of possible second utterances.
  - 21. The method of claim 1 wherein said first utterance comprises a zipstate and said second utterance comprises a city from a destination address on a package, said determination of the most probable first and second utterances resulting in the sorting of said package according to the package's destination address.
  - 22. The method of claim 1 wherein said first utterance comprises a word and said second utterance comprises spelled prefix including ordered symbols.
- 20 23. The method of claim 22 further including creating a list of possible prefixes that could be confused with said recognized prefix.
  - 24. The method of claim 23 wherein creating said list of possible prefixes includes determining, in the context of a preceding symbol or silence, a probability of confusing each recognized symbol in said prefix with each symbol in a list of possible symbols.
  - 25. The method of claim 23 wherein creating said list of possible prefixes includes determining, in the context of a preceding symbol or silence, a probability of confusing each recognized symbol in said prefix with more than one symbol.
  - **26.** The method of claim 23 wherein creating said list of possible prefixes includes determining, in the context of a preceding symbol or silence, a probability of confusing each recognized symbol in said prefix with an absence of a symbol.
- 27. The method of claim 23 wherein creating said list of possible prefixes includes replacing a sequence of symbols with a single symbol.

- 28. The method of claim 22 wherein said first utterance comprises a spelled word and said determination of the most probable first and second utterances results in recognizing said spelled word.
- 29. A method of generating a choice list from a continuously recognized utterance comprising:
  - recognizing a spoken utterance, consulting stored information to determine the probability of confusing possible utterances in the stored information with said recognized utterance, and producing a list of possible utterances from the stored information that could be confused with the recognized utterance.

- 30. The method of claim 29 further including rerecognizing said utterance against a merged list of said list of possible utterances and said recognized utterance to create a ranked list of possible utterances having a ranking based upon how closely each utterance in said merged list corresponds to said spoken utterance.
  - 31. A method of recognizing ambiguous inputs including:
- recognizing a first ambiguous input.
  recognizing a second ambiguous input having information that is related to said first ambiguous input, and determining the most probable first and second ambiguous inputs based on stored information about valid relationships between possible first and second ambiguous inputs.

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32. A method of training a speech recognizer, comprising:
 prompting a user to make a first utterance comprising symbols.
 recognizing said symbols, and
 calculating the probability of confusing each recognized symbol with the prompted symbol.

- **33.** The method of claim 32 wherein said probabilities are calculated within the context of the preceding symbol or silence.
- 10 34. A method of displaying word choices during speech recognition, comprising:

recognizing an uttered word, recognizing a spelling of a prefix of the word, whereby symbols are used to spell said prefix, and displaying a list of word choices on a screen for selection, a top choice on the list corresponding to a highest ranked choice.

- 35. The method of claim 34 wherein said symbols comprise letters, digits, and punctuation.
- 36. The method of claim 29 wherein said spoken work is recognized continuously.

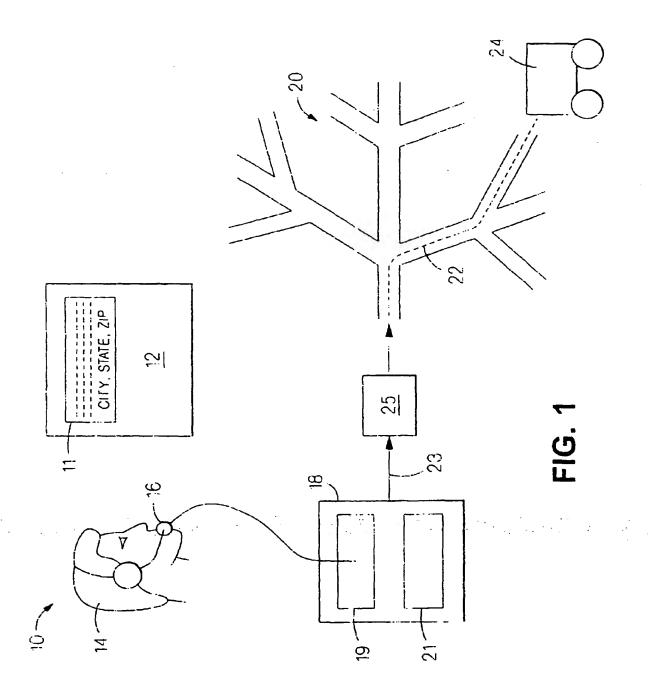
35. 36. 20 25

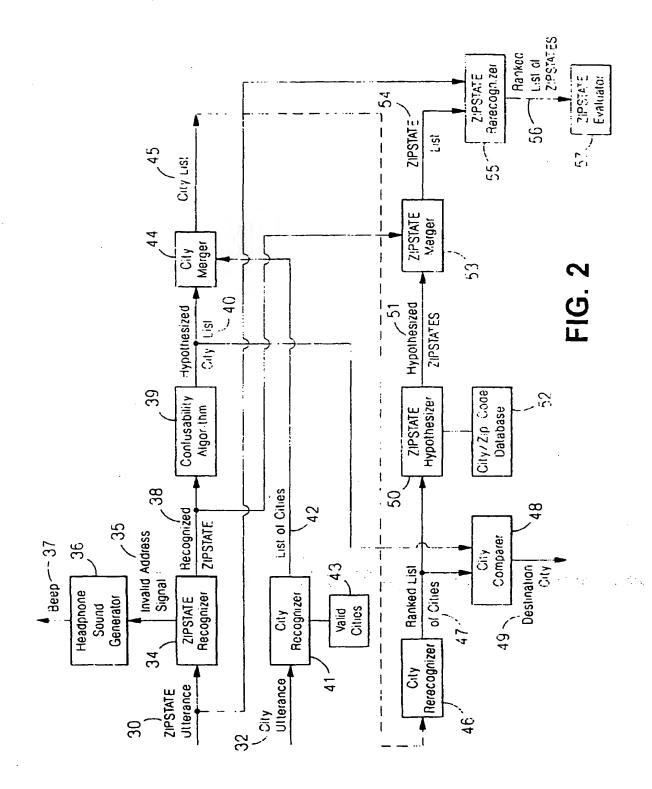
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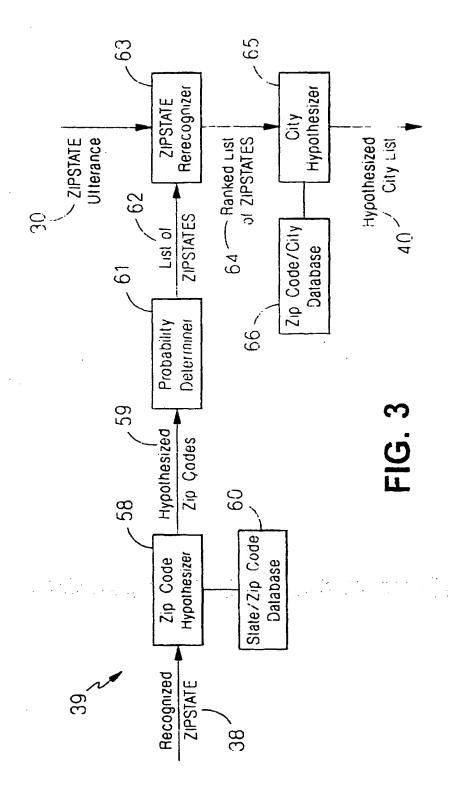
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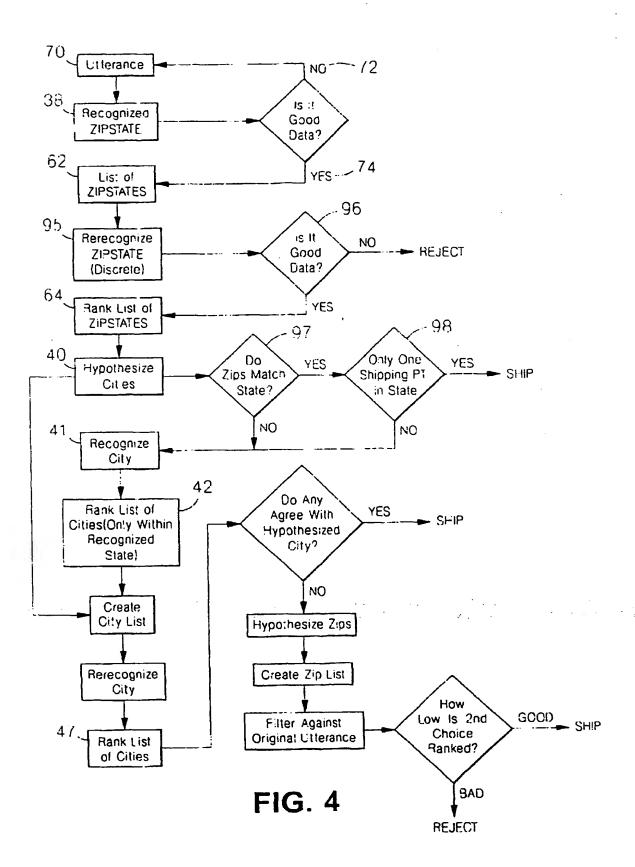
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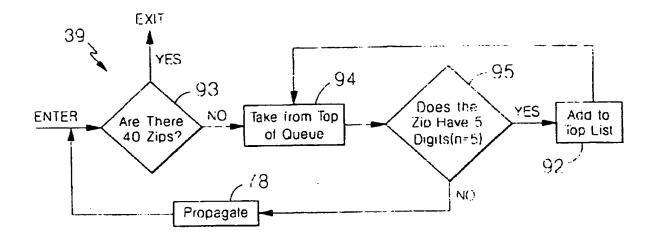
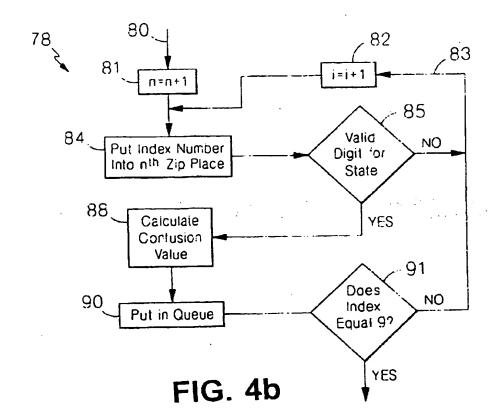


FIG. 4a



Confusability Array (of Probabilities)

		s .			Hypoth	Hypothesized				
	0		2	3	4	5	9	7	8	6
0	<b>,</b>	0.0204	0.0497.	0.0356,	0.0193,	0 0216,	0.0204.	0.0228,	0.0001.	0.0001,
•	0.0155,	_	0.0001,	0.0001,	0.0917.	0.0734,	0.0001,	0.0421,	0.0001,	0.0301
2	0.0734,	0.0204,	<b></b> :	0 1888.	0.0398.	0.0285,	0.1211,	0.0526,	0.0421,	0.0301
က	0.0094,	0.0001	0.0497	<del>-</del> -	0.0001,	0.0285,	0.0285,	0.0001	0.0588,	0.0497,
4	0.0155,	0.0917,	0.0216,	0.0216,		0.0657	0.0001,	0.0588,	0.0001,	0.0301
5	0.0094	0.0204.	0.0001	0.0301,	0.0193,	<b></b> *	0 0001	0 0001	0.0001	0.1353,
9	0.0053,	0.0001;	0.0285,	0.0356,	0.0001	0 0001,	<b>,-</b> `	0.0001	0.0001,	0.0001;
~	0.0094	0.0001	0.0216,	0.0216,	0.0193	0.0285.	0.0001,	,=v	0.0001,	0.0301
æ	0.0155,	0.0270,	0.0337	0.0374	0.0001	0.0001,	0.0285,	0.0001	←.	0.0001
က	0.0001	0.0001	0.0216.	0.0003	0.0001	0.0285,	0.0001	0.0001	0.0228	-

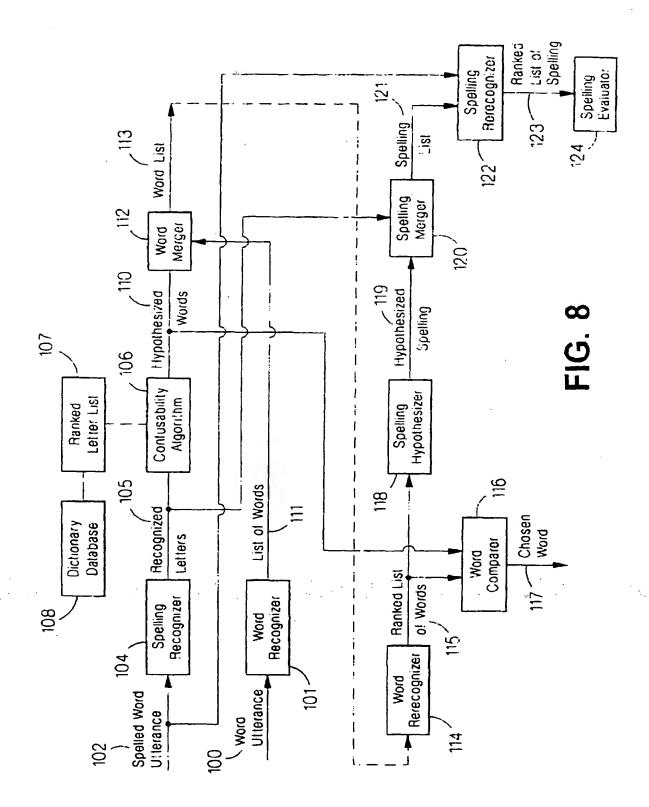
FIG. 5

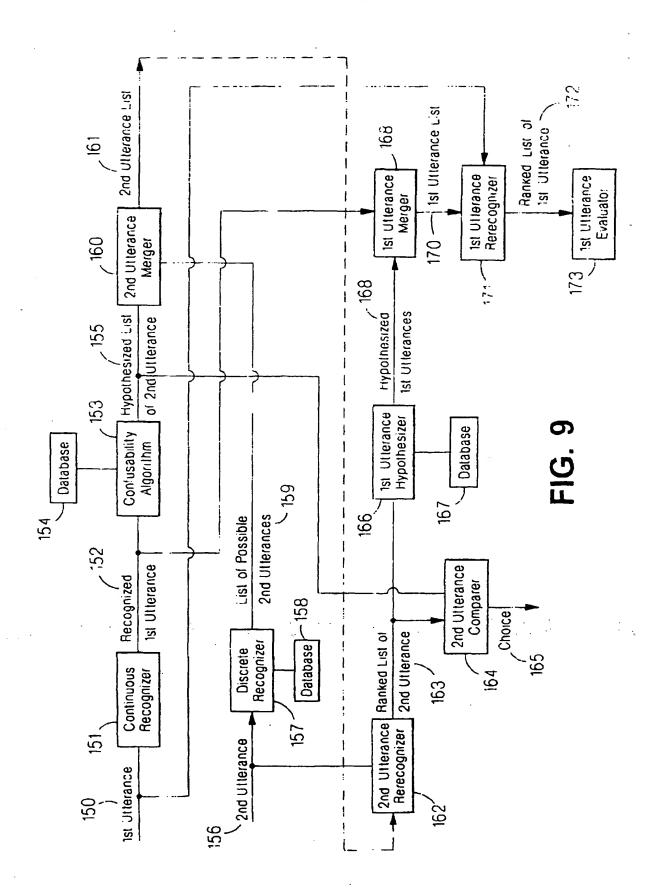
Recognized

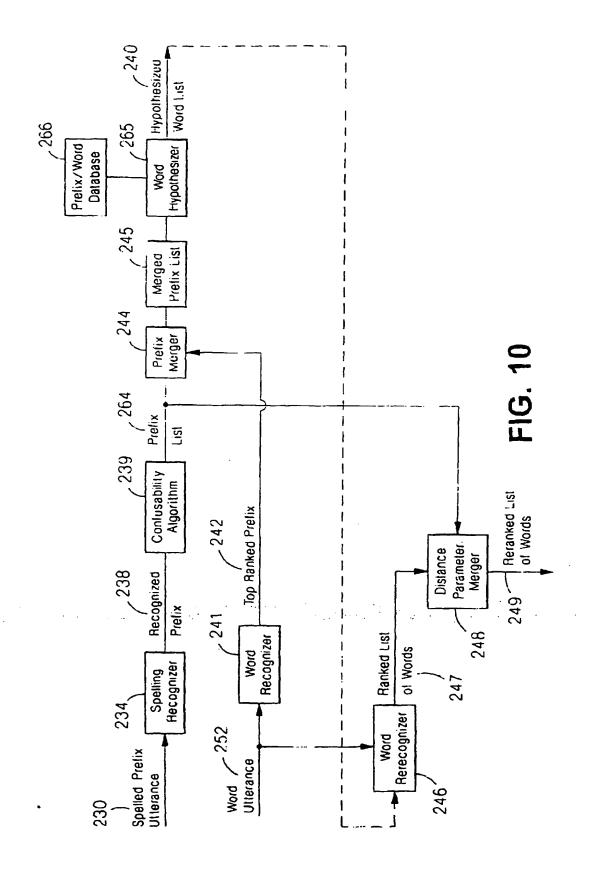
n = 1:	0	Code	Probability of Confusing Recognized Digit With i	Confusion Value
Recognized Digit=0	1	0	1	1
n=2.	i	01	0.0001	0.0001
Recognized Digit=3	2	02	0.0497	0.0497
_ n=3	n	020	0.0155	(.0497)(.0155)-0 ()007
Recognized	1	021	1	0.0497
Digit = 1	2	022	0.0001	<b>3</b>
	3	023	0.0001	O
	4	C24	0.0917	0.00456
	5	025	0.0734	0.00365
	6	026	0.0001	0
	7	027	0.0421	0.00309
n=4 Recognized	0	0210	0.0155	(.0497)(.0155)=0.0007
Digit=1	1	0211_	1	0.0497
J.g.(	2	0212_	0.0001	0
	3	0213_	0 0001	0
	4	0214_	0.0917	0.00456
	5	0215_	0.0734	0.00365
	6	0216.	0.0001	0
	7	0217_	0 0421	0.00209
	8	0218_	0.0001	0
	9	0219_	0.0301 -	0.0015
n=5	0	02110		(.0497)(0734)=.00365
Recognized Digit≈2	1	02111	.0204	.0010
Digit-2	2	02:12	1	0497
	3	02113	.1888	.0094
	4	02114	0398	.002
	5	02115	.0285	.0014
	6	02116	1211	.006
-	7	02117	0526	0026
	8	02118	0421	.0021
	9	02119	.0301	0015
ก=5	а	02140	0734	(.00456)(.0734)=.00033
	1	02141	0204	0
	2	02142	1	.00456
	3	02143	.1888	.00086
	4	02144	.0398	.00018
	5	02145	.0285	.00013
	6	02146	.1211	.00055
FIG. 6	7	02147	.0526	.0002
	8	02148	.0421	.00019
	9	02149	.0301	.00014

Zip Code	Confusion Value
02112	0.0497
02113	0.0094
02116	0.00456
02142	0.00456
02412	0.00456
02110	0.00365
02152	0.00365
02512	0.00365
02117	0.0026
02118	0.00209
02172	0.00209
02712	0.00209
02114	0.002
02119	0.0015
02192	0.0015
02115	0.0014
02111	0.001
02143	0.00086
02413	0.00086
02102	0.00077
02012	0.00077
02153	0.00069
02513	0.00069
02146	0.00055
10173	0.00039
02713	0.00039
02140	0.00033
02542	0.00033
02147	0.0002
02748	0.00019

FIG. 7







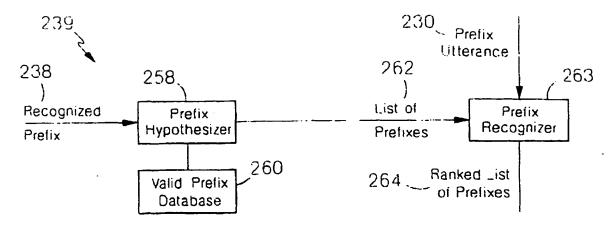


FIG. 11

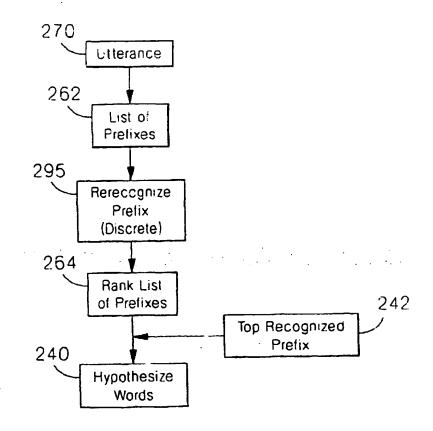
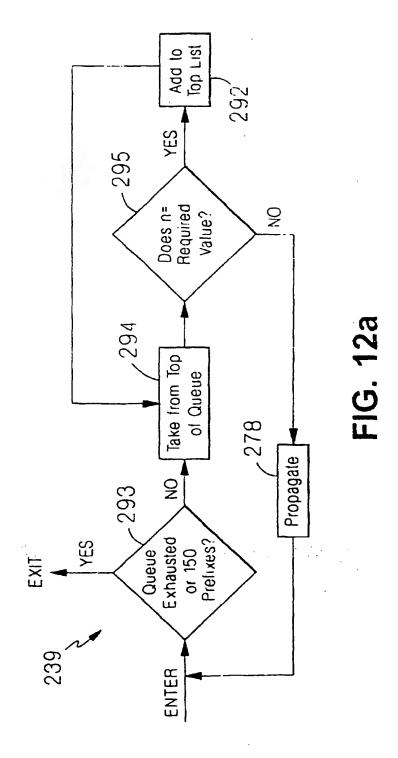
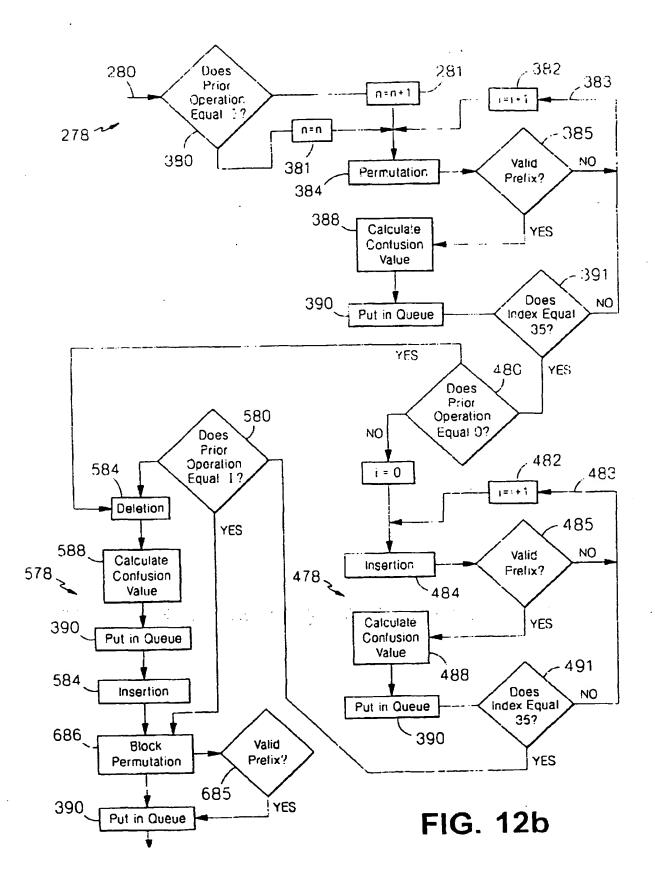


FIG. 12





# FIG. 13-1

Permutation

0 002171 0.004650 0.000552 0.003891 0.007890 0.000046 0 001848 0.003041 0.001000 0.001520 0.001512 0 000148 0 000478 0.008575 0.000914 0.000552 0.003891 0.048040 0.000046 0.008971 0.011736 0.022734 0.003090 0.001512 0.000875 0.000478 0,002171 0,000914 0,000552 0,003891 0,007057 0,000046 0,001948 0,003041 0,001190 0,001520 0,001512 0,000148 0,000478 0.002171 0.000914 0.000552 0.004522 0.007057 0.000046 0.001948 0.003041 0.001526 0.001520 0.019351 0.000148 0.000478 0.002171 0.000914 0.000552 0.010860 0.007057 0.000046 0.001948 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.010004 0.007057 0.000046 0.001868 0.003041 0.001190 0.001520 0.006230 0.000148 0.000478 0,002171 0.000914 0.000552 0.003891 0.007057 0.000048 0.001848 0.004800 0.001190 0.001520 0.001512 0.000148 0.000478 0.002350 0.000814 0.000858 0.003891 0.008311 0.000383 0.001560 0.011373 0.001020 0.001520 0.003898 0.000148 0.000398 0.002171 0.000914 0.000552 0.004990 0.008293 0.000080 0.003522 0.005117 0.002705 0.003631 0.005700 0.000148 0.000644 <u>0.002412 0.001016 0.000613 0.004323 0.007841 0.000051 0.002165 0.003379 0.001323 0.001689 0.001680 0.000165 0</u>000531 b 0.0000000 0.003096 0.452850 0.000402 0.009300 0.008422 0.000151 0.001030 0.000172 0.009661 0.000023 0.000297 e 0 0000000 0.011145 0.200916 0.006667 0.017673 0.097558 0.000151 0.001030 0 000172 0.002988 0 000023 0.000297 a 0.0000000 0.019282 0.530218 0.000610 0.010789 0.017751 0.000224 0.001030 0.000176 0.002747 0.000166 0.001532 d 0.000000 0.002656 0.036800 0.000350 0.010789 0.010831 0.001410 0.001030 0.000172 0.002988 0.000023 0.000297 c 0.000000 0.002656 0.086040 0.002740 0.010789 0.013360 0.000140 0.001030 0.000172 0.002988 0.000023 0.000297 / 0.0000000 0.002656 0.030420 0.000402 0.010789 0.010831 0.000160 0.001030 0.000172 0.002988 0.000023 0.000297 g 0.0000000 0.002656 0.000332 0.000402 0.175007 0.009246 0.000151 0.040180 0.005769 0.025523 0.000023 0.00029 h 0,000000 0,002656 0,000470 0,000402 0,018850 0,012150 0,000151 0,001030 0,000172 0,002988 0,000023 0 000297 | 0.000000 0.002656 0.506389 0.000402 0.010769 0.030317 0.000151 0.001030 0.000321 0.028698 0.000051 0.000297 0.007080 0.000142 0.000032 0.000030 0.000487 0.000010 0.000030 0.000048 0.000010 0.000034 0.000917 0.000014 0.037817 0.000142 0.0000032 0.000016 0.000487 0.000012 0.000012 0.000048 0.000006 0.000034 0.001101 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000020 0.000010 0.000048 0.000010 0.00110 0.000917 0.000014 0,009143 0,000142 0,000032 0,000016 0,000487 0,000012 0,000012 0,000048 0,000008 0,000034 0,000917 0,000014 0.007866 0.000158 0.000038 0.000018 0.000541 0.000013 0.000013 0.000053 0.000007 0.000038 0.001019 0.000016 0 007080 0,000142 0.00003**2 0.**000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000020 0,103141 0,000142 0,000032 0,000016 0,000487 0,000012 0,000012 0,000048 0,000006 0,000034 0,000917 0,000014 0.012100 0.000142 0.000032 0.000016 0.017730 0.000010 0.000010 0.000048 0.000010 0.000034 0.000317 0.000014 0.007060 0.000163 0.000032 0.000292 0.000487 0.000012 0.000012 0.000048 0.000006 0.000034 0.025897 0.000054 0.000012 0.000012 0.001598 0.000008 0.000034 0.000917 0.000014

## FIG. 13-2

0.005755 0.000914 0.000552 0.003891 0.027621 0.000046 0.004819 0.031803 0.001190 0.004730 0.001278 0.000148 0.000478 0.002171 0.000914 0.000552 0.010530 0.007057 0.000046 0.031581 0.026662 0.001015 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001948 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001848 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001848 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.029505 0.003028 0.019313 0.007057 0.000046 0.001948 0.006416 0.001190 0.002084 0.001512 0.000148 0.000478 0.002171 0.001820 0.012780 0.004330 0.007057 0.000048 0.001948 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.003734 0.000914 0.002154 0.057895 0.007057 0.000046 0.002434 0.002981 0.001928 0.001520 0.010751 0.000148 0.000478 0 012638 0 000914 0 000679 0 003891 0 011001 0 001162 0 004283 0 006677 0 002964 0 034373 0 002477 0 002094 0 000478 0,002171 0,000914 0,000552 0,003891 0,007057 0,000046 0,001848 0,003041 0,001190 0,001520 0,001512 0,000148 0,000478 0.002171 0.000914 0.000552 0.003891 0.006680 0.000046 0.001848 0.003041 0.001190 0.004530 0.001512 0.003148 0.000478 0.040527 0.000914 0.000552 0.003891 0.007057 0.000046 0.009596 0.002847 0.001190 0.003716 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001848 0.003041 0.001180 0.001520 0.001512 0.000148 0.000478 m 0.000000 0.004779 0.524063 0.000402 0.010769 0.027418 0.003529 0.001030 0.000172 0.002988 0.000022 0.000297 s 0,000000 0.005849 0.467862 0.000783 0.017138 0.010631 0.000151 0.001030 0.000172 0.002888 0.000023 0.000297 q 0.000000 0.002656 0.000230 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.00023 0.000297 U 0,000000 0,002656 0,415888 0,000668 0,012103 0,048972 0,00151 0,001030 0,000181 0,005085 0,000023 0,00336 n 0.0000000 0.003610 0.2869860 0.003010 0.010789 0.010631 0.000151 0.001030 0.000172 0.002888 0.000023 0.004100 p\_0.0000000 0.002856 0.023110 0.000402 0.010789 0.010831 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 U D.000000 D.005003 D.430380 D.000402 D.010045 D.010631 D.000151 D.001030 D.000172 D.008249 D.000208 D.000297 r 0.000000 0.002168 0.465430 0.000402 0.014219 0.024486 0.000151 0.001030 0.000172 0.006015 0.000136 0.000424 | 0.000000 0.002656 0.020020 0.000402 0.010789 0.010831 0.000220 0.001030 0.000172 0.00288 0.000023 0.000297 K 0.000000 0.003970 0.000010 0.000402 0.010789 0.010831 0.000151 0.001030 0.000172 0.002888 0.000023 0 000297 v 0.0000000 0.002656 0.017460 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002888 0.000023 0.000297 0.000000 0.015712 0.399558 0.000667 0.024812 0.040898 0.000151 0.001030 0.000172 0.003750 0.000023 0.000726 0.002656 0.000180 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.00023 0.000297 D D07680 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000317 0.000014 0,010167 0,000142 0,000032 0,000016 0,000487 0,000052 0,000228 0,000077 0,000008 0,000034 0,000917 0,000140 0.023613 0.000142 0.000032 0.000016 0.000750 0.000012 0.000012 0.000048 0.000005 0.000034 0.000917 0.000014 0.009843 0.000142 0.000032 0.000016 0.000487 0.000159 0.000012 0.000046 0.000008 0.000034 0.000917 0.000019 D 007080 D.001050 D.000032 D.000016 D.000487 D.000010 D.000010 D.000048 D 000010 D 000034 D.000917 D 000014 0.005650 0.000142 0.000040 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.001660 0.000014 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000314 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000014 0.007080 0.004160 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000817 0.000014 0.000142 0.000032 0.000034 0.000487 0.000012 0.000012 0.000048 0.000008 0.000034 0.001976 0.000014 0.007080 0.000142 0.000032 0.000017 0.000487 0.000012 0.000018 0.000048 0.000008 0.000034 0.000017 0.000014 0.000012 0.000012 0.000048 0.000006 0.000034 0.002872 0.000014 0.000010 0.000010 0.000048 0.000010 0.0000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000490 0.007080 0.000142 0.000032 0.000024 0.000487 0.000032 0.000016 0.000487 0.012167

0.002171.0 000914 0.000552 0.003891 0.007057 0.000046 0.001946 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000048 0.001648 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 3 001948 0.003041 0.001190 0.001520 0.001512 0 000148 3 000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000048 0.001848 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0 000914 0.000552 0.003891 0.007057 0.000048 0.001848 0.003041 0 001190 0 001520 0.001512 0.000148 0 000478 0.002171 0.000914 0 000552 0.003891 0 007057 0.0000046 0.001948 0.003041 0.001190 0 001520 0.001512 0 000148 3 000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001948 0.003041 0.001190 0.001520 0.001512 0.000148 0.003478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001948 0.003041 0.001190 0.001520 0.001512 0.000148 0.030478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001848 0.003041 0.001180 0.001520 0.001512 0.000148 0.000478 0.007060 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000046 0.000010 0.000034 0.000917 0.000014 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001848 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.003352 0.000914 0.001027 0.003891 0.020795 0.000046 0.001948 0.010401 0.011440 0.001520 0.001512 0.030148 0.000478 0.002171 0.000914 0.000552 0.003891 0.007057 0.000046 0.001848 0.003041 0.001190 0.001520 0.001512 0.000148 0.000478 0.002171 0.000914 0.000552 0.029831 0.007057 0.000046 0.001848 0.003041 0.001190 0.001520 0.001512 0.002716 0.017744 7 0.000000 0.002656 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.060172 0.002988 0.000023 0.000297 8 0.000000 0.002658 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 5 0.000000 0.002658 0.000010 0.000402 0.010789 0.010831 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 6 0.000000 0.002658 0.000010 0.000402 0.010789 0.010831 0.000151 0.001030 0.000172 0.002888 0.000023 0.000287 4 0.000000 0.002656 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 3 0.000000 0 002656 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 2 0.000000 0.002656 0.000010 0.000402 0.010789 0.010831 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 1 0.000000 0.002656 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 0.000000 0.002658 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 2 0.000000 0.002656 0.000010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 y 0.000000 0.023071 0.207489 0.000402 0.058899 0.062814 0.000151 0.001030 0.000172 0.025780 0.000023 0.000297 0.007080 0.000142 0.0000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000018 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000014 w 8.000000 0.002656 0.006010 0.000402 0.010789 0.010631 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297  $\times$  0.000000 0 002656 0.634766 0.000402 0.010789 0.010831 0.000151 0.001030 0.000172 0.002988 0.000023 0.000297 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.0000148 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.0000148 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000010 0.000034 0.000317 0.000014 0.007080 0.000142 0.0000032 0.000016 0.000487 0.000010 0.000010 0.0000148 0.000010 0.000034 0.000917 0.000014 D.047379 D.000142 D.001046 D.000016 D.000487 D.000012 D.000012 D.000048 D.000006 D.001048 D.001046 D.000014 0.007086 0.000142 0.000032 0.000016 0.000487 0.000010 0.000010 0.000048 0.000010 0.000034 0.000917 0.000014 0.007080 0.000142 0.000032 0.000016 0.000487 0.000012 0.0000148 0.000006 0.000034 0.000017 0.000014

0.013970 0.001208 0.003868 0.689783 0.001857 0.000803 0.002822 0.004593 0.002206 0.001881 0.001051 0.000893 0.001246

0,000013 0.000524 0.000386 0.000055 0.000714 0.000111 0.000003 0.000022 0.002475

0.001853 0.000548

1 0.000000 0.001183 0.001188 0.001583 0.001068 0.004031 0.000729 0.001814 0.000583 0.002225 0.000513 0.001755

0.002881 0.000546 0.000069 0.000524 0.000146 0.000055 0.000256 0.000026 0.000003 0.000022 0.004473 0.000078

0.081499 0.001208 0.003668 0.372154 0.001857 0.000603 0.002818 0.001545 0.002576 0.001881 0.004744 0.000999 0.001246

 $_{\rm K}$  0.000000 0.006668 0.001168 0.001182 0.001048 0.004031 0.000728 0.000833 0.000583 0.021831 0.000513 0.048156

0.002507 b.000548 0.000013 0.000524 0.000541 0.000055 0.000258 0.000026 0.000003 0.000022 0.002475 0.000030

.014970 0.001208 0.003314 0.615227 0.001857 0.000603 0.002918 0.001237 0.002576 0.003386 0.000516 0.000999 0.001246

| 0 000000 0.001831 0.000971 0 001182 0.0010**68 0.013320 0.000729 0.**000833 0.000543 0.005689 0.018824 0 005758

0.006848 0.001206 0.003668 0.647941 0.001857 0.000603 0.009816 0.001545 0.002576 0.002961 0.000637 0.000999 0.001246 0.001439 0.000546 0.000013 0.000524 0.000146 0.000055 0.000258 0.000029 0.000003 0.000022 0.002475 0.000015 0.006848 0.001208 0.003332 0.628658 0.001857 0.000803 0.002918 0.003813 0.002576 0.001861 0.001335 0.002849 0.001246 0.015640 0.001356 0.008830 0.542111 0.001657 0.000603 0.008270 0.002201 0.004358 0.001670 0.000637 0.000959 0.001246 0.006848 0.001206 0.008442 0.643868 0.001857 0.000803 0.004229 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 0.011255 0.001206 0.014544 0.513147 0.024011 0.000603 0.006442 0.001545 0.010950 0.001861 0.000940 0.000999 0.001246 0.007624 0.001206 0.G02925 0.592279 0.002235 0.000803 0.004085 0.003357 0.002578 0.003769 0.00637 0.004208 0.001246 0.006772 0.004913 0.007726 0.504343 0.017450 0.000603 0.005595 0.001545 0.002923 0.003614 0.000637 0.002787 0.002605 0.002171 0.000914 0.000552 0.003891 0.007057 0.000048 0.001848 0.003041 0.001150 0.001512 0.000148 0.000478 0.0 0.022414 0.001206 0.020971 0.414199 0.001857 0.007815 0.003358 0.002808 0.002576 0.001861 0.00637 0.000999 0.001246 G.006848 0 002023 0.003688 0 616128 0.001857 0 000603 0.002918 0.001545 0.002576 0 001861 0 000637 0 016075 0 CU2409 0.007668 0.001340 0.004075 0.073477 0.002064 0.000670 0.003242 0.001717 0.002862 0.002068 0.000708 0.001110 0.001384 h 0.000000 0 002102 0.001168 0.001192 0.000862 0.003447 0.000728 0.000633 0 020083 0 002225 0.001383 0 001755 0.000000 0.002469 0.001168 0.001192 0.001068 0.004133 0.000729 0.020401 0.000788 0.002271 0.000513 0.001755 e 0 0000000 0.001631 0.001633 0.001192 0.008091 0.036376 0.000728 0.000633 0.000583 0.002225 0.000513 0.001755 ; O 000000 0.005676 0.001168 0.001182 0.001068 0.010682 0.000728 0.000833 0.000583 0.028732 0.000513 0.001755 d 0.000000 0 004287 0.006011 0.001192 0.017020 0.027750 0.000729 0.002550 0.000583 0.002225 0.000513 0.001755 1 0.000000 0.002048 0.001168 0.001182 0.001068 0.004031 0.017518 0.000833 0.00283 0.002225 0.000513 0.001755 6 D.000000 D.001831 D 023924 D.001192 D 001068 D.003528 D.000729 D 000833 D.000583 D 002225 D.000513 D 001755 C D 0000000 D 004628 0.001168 0.017850 0.001068 0.005087 0.001852 0.000833 0.000583 D 002225 0.000513 0 001755 a 0.000000 0.018853 0.000837 0.003445 0.001068 0.004031 0.000728 0.000833 0.000583 0.007566 0.000513 0.002074 9 0,000000 0,00285**6 0,000010 0,000402 0,010789 0,010811 0,000151** 0,001010 0,000172 0,002888 0 000023 0 00029*1* sil 0.000000 0.002034 0.001288 0.001324 0.001187 0.004478 0.000810 0.000826 0.000648 0.002472 0.000570 0.001950 0.001439 0.000546 0.000013 0.000524 0.001054 0.000055 0.002850 0.000026 0.000003 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000546 0.000148 0.000055 0.000535 0.000028 0.000003 0.000022 0.002475 0.000015 0.001439 0.000546 0.000058 0.000524 0.000148 0.000055 0.000258 0.000411 0.000003 0.000022 0.002136 0.000103 0.001439 0.000546 0.000013 0.000524 0.000148 0.00005\$ 0.000258 0.000026 0.000003 0.000022 0.002475 0.000015 CO1439 D.D00546 D.D00013 D.D00524 D.D00242 D.D00055 D.D00538 D.D00026 D.D00003 D.D00022 D.D13548 D.D00015 0.012972 0.001531 0.000013 0.000524 0.000148 0.000055 0.003088 0.000026 0.000003 0.000022 0.003565 0.000020 0.001439 0.000546 0.000015 0.016244 0.000148 0.000055 0.000256 0.000026 0.000003 0.000022 0.066354 0.000075 0.001439 0.000546 0.000013 0.000524 0.000146 0.000055 0.000258 0.000026 0.000003 0.000022 0.002475 0.000015 0.001599 0.000606 0.000015 0.000562 0.000165 0.000061 0.000287 0.000028 0.000004 0.00024 0.002750 0.000017

## FIG. 13-5

0 019663 0.001206 0.003668 0.624418 0.001857 0.000603 0.005720 0.001545 0.005158 0.001679 0.006775 0.000959 0.001246 0.006848 0.001075 0.003668 0.728704 0.001857 0.000603 0.006341 0.001545 0.002576 0.001861 0.000637 0.006707 0.001246 0.006848 0.001690 0.003007 0.596605 0.004424 0.004985 0.005520 0.006306 0.020282 0.002039 0.001678 0.000359 0.001246 0.006848 0.001206 0.003668 0.577312 0.002199 0.000519 0.002818 0.001545 0.023369 0.028146 0.000637 0.000999 0.001246 0.006848 0.001206 0.003668 0.681570 0.001857 0.000603 0.013857 0.002147 0.002576 0.001861 0.001190 0.000999 0.001246 0 006848 0.0012C6 0.003044 0.647349 0.001857 0.000603 0.003777 0.016866 0.002576 0.004769 0.000637 0 000999 0 001584 0.0006848 0.001318 0.017567 0.562763 0.001857 0.000603 0.002818 0.001298 0.008990 0.001861 0.000637 0.000999 C.027691 0.013837 0.001208 0.003890 0.574684 0.001857 0.009379 0.003385 0.001545 0.002576 0.011212 0.000637 0.000999 0.001246 0.006848 0.001206 0.003688 0.000010 0.001857 0.000603 0.002918 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 0.014445 0.001206 0.003668 0.608433 0.014677 0.001016 0.005203 0.003112 0.005428 0.003778 0.000637 0.000999 0.001246 0.006848 0.001128 0.003668 0.5/7351 0.001593 0.000603 0.006089 0.001919 0.002680 0.001861 0.000570 0.000999 0.001246 0.008848 Q.014803 D.003668 D.856025 D.001857 D.000603 D.002389 D.002006 D.003660 D.001673 D.002168 D.000999 D.001245 0.033921 0.012969 0.026192 0.496047 0.001857 0.000603 0.008565 0.006554 0.002576 0.001827 0.001315 0.004632 0.001246 v 0.0000000 0.002520 0.004430 0.001528 0.002782 0.007665 0.000729 0.004348 0.000583 0.004455 0.000513 0.001755 W 0.000000 0.001831 0.001168 0.001192 0.001068 0.004031 0.000729 0.000813 0.000563 0.002225 0.000513 0.001755 x 0.0000000 0.001631 0.001168 0.001192 0.001068 0.004031 0.000865 0.000833 0.000583 0.003039 0.000513 0.001755 U 0.0000000 0.001631 0.001168 0.001192 0.001068 0.006034 0.000729 0.006833 0.000583 0.002225 0.000513 0.001755 v 0.0000000 0.006214 0.001168 0.001192 0.001068 0.005687 0.000729 0.001056 0.000583 0.002225 0.000513 0.001755 s 0.000000 0.001751 0.001168 0.001192 0.001068 0.004031 0.003580 0.000715 0.000583 0.002225 0.000513 0.001755 4 0 000000 0 001631 0.001168 0 001192 0 001068 0 004031 0 000729 0 000633 0 000583 0 002225 0 000513 0 001755 1 0.000000 0.001631 0.001168 0.006605 0.001068 0.004031 0.000729 0.000833 0.000563 0.002225 0.000513 0.001755 m 0.0000000 0.001831 0.001168 0.001475 0.001312 0.004031 0.000768 0.000833 0.000583 0.002225 0.000513 0.001973 p 0 0000000 0 002625 0 001168 0 002155 0 000860 0 006683 0 000601 0 000683 0 000583 0 002225 11 000513 0 001913 n 0.0000000 0.001797 0.001844 0.001192 0.002986 0.003315 0.000729 0.000841 0.000583 0.006032 0.000513 0.001755 r 0.0000000 0.002322 0.000987 0.001227 0.001068 0.004031 0.001301 0.000845 0.000583 0.002225 0.000513 0.001755 0 0.000000 0.001831 0.001168 0.000994 0.002128 0.004031 0.001592 0.000833 0.001380 0.002225 0.000513 0.003701 0.001439 0.000546 0.000225 0.000524 0.002723 0.000055 0.000225 0.000028 0.000003 0.000022 0.002475 0.000015 0.001377 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000013 0.000098 0.002475 0.000015 0.001439 0.000546 0.000013 0.000460 0.000148 0.000055 0.000258 0.000026 0.000003 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000028 0.000010 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000003 0.00022 0.002475 0.000019 0.001439 0.000548 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000003 0.000022 0.002475 0.000015 0.001439 0.000546 0.000020 0.000767 0.000162 0.000055 0.000258 0.000028 0.000003 0.000022 0.002475 0.000027 0 021890 0.000548 0 000013 0.000524 0.000148 0.002014 0.000256 0.000028 0.000003 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.001182 0.000148 0.000055 0.001075 0.000138 0.000003 0.000022 0.002475 0.000015 0,000546 0.0000013 0.000524 0.000475 0.000055 0.000258 0.000027 0.000003 0.000605 0.002475 0.000033 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000003 0.000022 0.005218 0.000081 0.003426 0.000546 0.000011 0.000524 0.000148 0.000073 0.000258 0.000165 0.000003 0.000022 0.002475 0.000026 0.001313 0.000546 0.000013 0.000524 0.000148 0.000055 0.0000871 0.000026 0.000003 0.000022 0.002475 0.000015 0.001883

### FIG. 13-6

0.000033 0.000115 0.000455 0.000869 0.000172

0.000618 0.000008 0.000148 0.000373 0.000303 0.000255

0.006848 0.001206 0.003668 0.000010 0.001857 0.000603 0.002918 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 0 006848 0,001206 0,003668 0,000010 0,001857 0,000603 0,002818 0,001545 0,002576 0,001861 0,000637 0 000999 0 001246 0.006848 0.001206 0.003668 0.000010 0.001857 0.000603 0.002818 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 Q.006648 0 001206 0.003668 0.000010 0.001857 0.000603 0.002818 0.001545 0.002576 0 001861 0 000637 0 000999 0 001246 0.006848 0.001208 0.003688 0.000010 0.001857 0.000603 0.002818 0.001545 0.002576 0.001861 0.00637 0.000999 0.001246 0.006848 0.001208 0.003668 0.000010 0.001857 0.000603 0.002918 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 0.001100 0.001950 0.003245 0.001713 0.000984 0.004380 0.868866 0.002084 0.001822 0.000409 0.000860 0.004758 0.006848 0.001206 0.003688 0.000010 0.001857 0.000803 0.002918 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 0.006848 0.002543 0.008837 0.617612 0.001857 0.000803 0.003318 0.001545 0.002576 0.001861 0.000637 0.000999 0.001246 U 006848 D 001206 D 003668 D 000010 D 001857 D 0000603 D 002918 D 001545 D 002576 D 001861 D 000637 D 000999 D 001246 0,006848 0,001208 0,003668 0,000010 0,001857 0,000603 0,002918 0,001545 0,002576 0,001861 0,000637 0,000999 0,001246 0.006848 0.001206 0.003668 0.000010 0.001857 0.000603 0.002918 0.001545 0.002576 0.001861 0.00637 0.006999 0.001246 8 0.000000 0.001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000633 0.000583 0.002225 0.000513 0.001755 6 0.000000 0.001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000633 0.000583 0.002225 0.000513 0.001755 7 0.000000 0.001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000833 0.000583 0.002225 0.000513 0.001755 9 0,0000000 0,001631 0,001188 0,001192 0,001088 0,004031 0,000729 0,000833 0,000583 0,002225 0 000513 0,001755 5 0.000000 0.001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000633 0.000583 0.002225 0.000513 0.001755 2 0.000000 0.001631 0.001168 0.001192 0.001088 0.004031 0.000729 0.000633 0.000583 0.002225 0.000513 0.001755 3 0.000000 0.001831 0.001168 0.001192 0.001068 0.004031 0.000729 0.000833 0.000583 0.00225 0.000513 0.001755 4 0.000000 0 001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000833 0 000583 0 002225 0 000513 0 001755 0.001955 0.001499 0.001677 0.007384 0.002557 0.001206 0.001291 0.003364 0.000120 0.001343 0 0.000000 0 001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000633 0.000583 0 002225 0.000513 0 001755 1 0 0000000 0.001631 0.001168 0.001192 0.001068 0.004031 0.000729 0.000833 0.000583 0 002225 0.000513 0 001755 z 0,0000000 0.003504 0.001168 0.005415 0.001068 0.011636 0.000729 0.000633 0.000583 0.002225 0.000513 0.001755 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0,000148 0,000055 0,000258 0,000026 0,000010 0,000022 0,002475 0,000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000146 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000146 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.001439 0.000548 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.019940 0.000013 0.000524 0.000148 0.000055 0.000268 0.000026 0.000003 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.000015 0.001439 0.000546 0.000013 0.000524 0.000148 0.000055 0.000258 0.000026 0.000010 0.000022 0.002475 0.001439 0.000548 0.000013 0.000524 sil 0.000000 0.004293

### FIG. 13-7

0.002059 0.000990 0.002006 0.003951 0.001541 0.000885 0.003942 0.553382 0.001675 0.001640 0.000368 0.000774 0.019805 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.003842 0.542007 0.004799 0.001640 0.000368 0.000774 0.023056 0.002215 0.000866 0.001755 0.002921 0.001536 0.000885 0.003942 0.574571 0.001532 0.001640 0.000368 0.000774 0.004283 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.003842 0.000010 0.001875 0.001640 0.000368 0.000774 0.004283 0.027585.0.0009990 0.001755 0.011560 0.001541 0.000885 0.003842 0.582203 0.001875 0.001640 0.000368 0.001221 0.004283 0.002215 0 000990 0.009344 0.002921 0 001673 0.000885 0.003942 0.553366 0 004889 0 001640 0 000368 0 000774 0 030089 0.026531 0.000990 0.001755 0.002489 0.001541 0.000885 0.003842 0.488323 0.001875 0.001640 0.000368 0.000774 0.004283 .004585 0.024812 0.013511 0.003071 0.001541 0.000885 0.004842 0.588167 0.001875 0.001640 0.000368 0.000774 0.005753 0.002729 0.000990 0.001755 0.002921 0.002925 0.000885 0.003942 0.585748 0.003204 0.001407 0.002677 0.000774 0.004283 0,002215 0 000990 0,001755 0,002921 0,005434 0,000885 0,003942 0,611482 0,001875 0,001640 0 000368 0 000774 0 006459 0.002215 0.002389 0.001755 0.002921 0.001891 0.000885 0.003942 0.573872 0.004287 0.001911 0.000368 0.000774 0.004283 0.002530 0.001743 0.001755 0.004628 0.003919 0.000885 0.003942 0.654923 0.001875 0.003154 0.004455 0.000774 0.004283 0.000990 0.003598 0.002956 0.008057 0.000885 0.004277 0.598122 0.007610 0.002877 0.002257 0.000774 0.005391 m 0.000000 0.006033 0.001760 0.003976 0.001510 0.008736 0.002301 0.001085 0.001162 0.003987 0.000108 0.001208 h 0.000000 0.003864 0.001760 0.005747 0.001472 0.006655 0.011126 0.002849 0.025652 0.006715 0.000108 0.001208 k 0.000000 0.003864 0.001760 0.003473 0.001510 0.023628 0.002301 0.001085 0.001162 0.003028 0.000198 0.032569 g 0.0000000 0.003864 0.001780 0.001349 0.001510 0.009151 0.002301 0.030765 0.001162 0.003028 0.000108 0.001208 0.0000000 0.003864 0.001760 0.001349 0.001510 0.006855 0.002301 0.001065 0.001162 0.003028 0.00108 0.001208 | 0.000000 0.003864 0.001760 0.001349 0.001510 0.006655 0.002301 0.001085 0.002111 0.021339 0.000108 0.001208 ; 0.000000 0.022428 0.001760 0.001286 0.001510 0.009069 0.002301 0.001085 0.002231 0.025378 0.000142 0.001596 4 D 0000000 0.003864 0.013308 0 001349 0 014492 0.012508 0.002699 0.004816 0.001182 0 003028 0.000108 0 001208 e 0.0000000 0.003864 0.006517 0.001399 0.007746 0.033169 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 b 0,0000000 0,003864 0,015674 0,001349 0,005781 0,009242 0,002301 0,001085 0,001162 0,003028 0,00108 0,001208 c 0 0000000 0.003864 0.001760 0.026806 0.003835 0.006655 0.006699 0 001085 0.001162 0 002508 0.000108 0 001208 | 0.000000 0.010485 0.001760 0.001349 0.001510 0.006655 0.045208 0.003520 0.003522 0.003203 0.000359 0.001354 a 0.0000000 0.023288 0.001760 0.001349 0.001510 0.030871 0.002301 0.001085 0.003187 0.003028 0 000305 0 003354 0.002971 0.000556 0.000016 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.002759 0.000809 0.001470 0.000556 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155 0 001470 0.000556 0.000007 0.000131 0.000336 0.000273 0.000228 0.000058 0 000104 0.000409 0.000782 0.000155 0.001470 0.000556 0.000007 0.000131 0.000336 0.001048 0.000257 0.000030 0.000355 0.001059 0.008846 0.000155 0.005418 0.000556 0.000007 0.000644 0.000338 0.000273 0.000228 0.000030 0.000104 0.000409 0.000782 0.000155 0.001470 0.000556 0.000035 0.000131 0.000338 0.000273 0.000229 0.000030 0.000104 0.000524 0.000992 0.000155 0.001470 0.000556 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155 0.001293 0.000556 0.000007 0.000131 0.000336 0.000273 0.004168 0.000030 0.000104 0.000409 0.000782 0.000155 0.001470 0.000556 0.000007 0.000203 0.000336 0.000273 0.000228 0.000030 0.000213 0.000409 0.001031 0.000155 0.001470 0.000556 0.000007 0.000131 0.000336 0.005702 0.000229 0.000030 0.000104 0.005683 0.000782 0.000155 0.001470 0.000556 0.000010 0.000131 0.000336 0.000273 0.000228 0.000030 0.000104 0.000409 0.004576 0.000155 0.001470 0.000556 0.000007 0.000131 0.000338 0.000273 0.000229 0.000030 0.000104 0.000409 0.001414 0.000155 0.000558 0.000007 0.000311 0.000338 0.002951

### FIG. 13-8

0.602215 0 000990 0.001408 0.004537 0.001541 0.000885 0.029440 0.533464 0.001675 0 003508 0.000368 0 028703 0 020689 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.003842 0.000010 0.001875 0.001640 0.000368 0.000774 0.004283 .002215 0.000990 0.001755 0.004738 0.001541 0.000885 0.003842 0.616648 0.001875 0.002042 0.000368 0.000774 0.004283 0.001776 0.0000990 0.001570 0.002921 0.008210 0.000938 0.003942 0.637364 0.023484 0.001640 0.000358 0.000774 0.003909 0.032215 0.000990 0.002725 0.002921 0.002483 0.002005 0.003842 0.608387 0.001875 0.024595 0.000368 0.000774 0.004283 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.012032 0.585311 0.001555 0.001640 0.000820 0.000774 0.004263 0.002215 0.000980 0.001755 0.010987 0.001541 0.000885 0.033193 0.573761 0.004203 0.001640 0.000368 0.000774 0.005252 .011049 0.000090 0.001755 0.002706 0.001541 0.000885 0.003942 0.615729 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.004040 0.027540 0.002895 0.001541 0.000885 0.003842 0.804695 0.001875 0.001640 0.000368 0.000774 0.004283 ) 002215 0.001981 0.001755 0.002921 0.021868 0.000**972 0.003842 0.623832 0.**002532 0.001640 0.000368 0.000774 0.006362 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.003842 0.001240 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.000990 0.001755 0.002821 0.001541 0.000885 0.003842 0.005830 0.001875 0.001640 0.000388 0.000774 0 C04283 0.023320 0.000990 0.001755 0.041892 0.001541 0.000885 0.005702 0.539338 0.001790 0.001640 0.002239 0.000774 0.004283 u 0.0000000 0.003864 0.002332 0.001349 0.001510 0.010584 0.002301 0.001085 0.003725 0.003028 0.000108 0.001208 v 0.0000000 0.003864 0.025698 0.001349 0.014585 0.042202 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 W 0 000000 0.003864 0.001760 0.001349 0.001747 0.005772 0.002301 0.001085 0 001162 0.009531 0 000168 0 001208 x 0.0000000 0.003864 0.001760 0.001349 0.001510 0.006655 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 5 0.0000000 0.007070 0.001760 0.001349 0.001510 0.006655 0.002301 0.001085 0.001162 0.004376 0.000108 0.001208 0 0.0000000 0.011723 0.001724 0.001349 0.001510 0.008655 0.002301 0.001085 0.000889 0.002789 0.000108 0.001421 D 0.000000 0.003864 0.001760 0.001349 0.004273 0.019405 0.002301 0.001085 0.001162 0.003028 0.00108 0.001206 1 0.000000 0.001864 0.001760 0.002001 0.001510 0.006202 0.001085 0.001162 0.001082 0.001108 0.001268 y 0 0000000 0.010078 0.001760 0.001349 0.001510 0.008730 0.002301 0.001085 0.001162 0 007650 0.000108 0 001364 z 0.000000 0.003884 0.001780 0.001349 0.001510 0.008655 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 0 000000 0 003864 0 001760 0 001349 0 001510 0 066655 0 002301 0 001085 0 001162 0 003828 0 000108 0 001208 r 0.000000 0.004037 0.001780 0.003502 0.001510 0.007878 0.002301 0.001085 0.001162 0.003028 0.000108 0.001206 0 002124 0.000558 0.000007 0.000131 0.000338 0.000273 0.000229 0.000030 0.000120 0.000409 0.001116 0.000155 0.001470 0.000556 0.000007 0.000131 0.000336 0.000273 0.000228 0.000030 0.000400 0.000409 0.000121 0.000155 D.010959 D.000803 D.000007 D.000131 D.000138 D.000387 D.000228 D.000030 D.000104 D.000409 D.000782 D.000155 D 001642 0.000556 0.000007 0.000131 0.001777 0.000273 0.000229 0.000030 0.000104 0.000409 0.000745 0.000155 0.001470 0.000558 0.000007 0.000131 0.000338 0.000507 0.000228 0.000041 0.000104 0.000408 0.000782 0.000155 0.001470 0.000558 0.000041 0.000131 0.001353 0.000528 0.000228 0.000030 0.000104 0.000518 0.001311 0.000155 3.001470 0.000556 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155 0.001312 0.000558 0.000007 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.003024 0.000155 0.001470 0.000556 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000164 0.000409 0.000782 0.000155 3.025503 0.000556 0.000007 0.000131 0.000336 0.000273 0.000228 0.000027 0.000131 0.000409 0.000782 0.000155 0.001470 0.000558 0.000008 0.000261 0.000336 0.000273 0.000228 0.000107 0.000104 0.000409 0.000641 0.000155 0.001470 0.000556 0.000007 0.000131 0.000338 0.000239 0.000039 0.000030 0.000104 0.000409 0.000782 0.000155 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155

0.002215 0.000990 0.001755 0.002821 0.001541 0.000885 0.003842 0.102760 0.001875 0.001640 0.000368 0.000774 0.006170 .002215 0.000980 0.001755 0.002921 0.001541 0.000885 0.003942 0.000010 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.000880 0.001755 0.002821 0.001541 0.000885 0.003842 0.000010 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.003942 0.000010 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.000990 0.001755 0.002921 0.001541 0.00088**5 0.003842 0**.00010 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.000990 0.001755 0.002821 0.001541 0.000885 0.003842 0.000010 0.001875 0.001640 0.000368 0.000774 0 004283 0.002215 0.000890 0.001755 0.002921 0.001541 0.000885 0.003842 0.000010 0.001875 0.001640 0.000368 0.000774 0.004283 0.002215 0.000890 0.001528 0.007452 0.001541 0.028888 0.043803 0.415858 0.001580 0.018124 0.000368 0.000774 0.021006 0.001541 0.000885 0.003842 0.189230 0.008170 0.001640 0.00368 0.000774 0.004283 0.001640 0.000368 0.000774 0.004283 8 D.000000 O.003864 O.001760 O.001349 O.001510 O.006655 D.002301 O.001085 D.001162 D.003028 D.000108 D.001208 7 0.000000 0.003864 0.001780 0.001349 0.001510 0.006655 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 9 0 000000 0 003884 0 001780 0 001349 0 001510 0 006655 0 002301 0 001085 0 001162 0 003028 0 000108 0 001208 6 0.000000 0.003864 0.001760 0.001348 0.001510 0.008655 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 5 0.0000000 0.003864 0.001760 0.001349 0.001510 0.006655 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 4 0.000000 0.003864 0.001760 0.001349 0.001510 0.006855 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 1 0.000000 0.029530 0.001780 0.001349 0.001510 0.006655 0.002301 0.001085 0.001162 0.003028 0.000108 0.002480 2 0.000000 0.003664 0.001760 0.001349 0.001510 0.006655 0.002301 0.001085 0.001162 0.003028 0.000108 0.001208 3 0.000000 0.003884 0.001760 0.001349 0.001510 0.008855 0.002301 0.001085 0.001182 0.003028 0.000108 0.001208 0 0.000000 0.003864 0.001760 0.001349 0.001288 0.006821 0.002301 0.001085 0.001162 0.014456 0.002863 0.001208 0.001470 0.000556 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155 0.004540 0.000782 0.000155 0.000131 0.000336 0.000273 0.000228 0.000030 0.000104 0.000409 0.000782 0.000155 D. 001470 D. 000558 D. 000010 D. 000131 D. 000336 D. 000273 D. 000228 D. 000030 D 000104 D. 000409 D. 000782 D 0.001470 0.000558 0.000010 0.000131 0.000336 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155 0.001470 0.000558 0.000010 0.000131 0.000336 0.000273 0.000228 0.000030 0.000104 0.000409 0.000782 0.000155 0.001470 0.000558 0.000010 0.000131 0.000338 0.000273 0.000229 0.000030 0.000104 0.000409 0.000782 0.000155 0,000217 0,009052 0.001532 0.004475 0.000407 0.002794 0.002651 0.002258 0.005160 ,001470 0.000558 0.000010 0.003130 0.000338 **0.000273 0.000228 0.**000050 0.000160 0.000409 0.000782 0.000155 0.000336 0.000273 0.000228 0.000300 0.000300 0.000336 0.000273 0.000228 0.000030 0.000104 0.002215 0.000990 0.001755 0.002921 0.001541 0.000885 0.003842 0.000010 0.001875 0.001470 0.000558 0.000010 0.000131 0.002215 0.000990 0.001755 0.002821 0.001470 0.000558 0.000010 001470 0.020579 0.000007

# FIG. 13-9

### FIG. 13a-1

Insertion

8

0.003468 0.0002388 0.001217 0.006009 0.002975 0.000038 0.003162 0.005570 0.000885 0.003434 0.001021 0.000133 0.001545 0.008550 0.000207 0.000010 0.000014 0.012360 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010 0.003668 0.002398 0.001217 0.006009 0.004635 0.000285 0.003162 0.007827 0.000885 0.003434 0.002715 0.000133 0.001545 0.007830 0.000207 0.000010 0.000014 0.000348 0.000008 0.000011 0.001275 0.000006 0.000012 0.001153 0.000009 0.003668 0.002398 0.001217 0.006008 0.002875 0.000038 0.003162 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545 0.003668 0.002398 0.001217 0.014113 0.002875 0.000038 0.003234 0.003850 0.00885 0.003434 0.003805 0.001545 0.003668 0.002398 0.001217 0.006009 0.002975 0.000038 0.003162 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545 003888 0.002388 0.001217 0.006008 0.006808 0.000058 0.000058 0.002871 0.003650 0.001908 0.003158 0.003214 0.000133 0.001545 0.004846 0.002398 0.031217 0.006009 0.036343 0.000038 0.004114 0.003550 0.016599 0.003434 0.001021 0.001503 0.001545 0.004075 0.002665 0.001353 0.006677 0.003305 0.000043 0.003513 0.004056 0.000984 0.003816 0.001134 0.000148 0.001717 D.003668 D.002388 D.001217 D.006009 D.003840 D.000018 D.003162 D.003650 D.000885 D.003434 D.001021 D.000133 D.001345 0.003868 0.002388 0.001217 0.006009 0.004744 0.000038 0.003182 0.003650 0.001337 0.003434 0.016841 0.000131 0.001545 0.003668 0.002398 0.001217 0.006009 0.002875 0.000038 0.003182 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545 0.003668 0.002398 0.001217 0.006009 0.007200 0.000038 0.003162 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545 0.124785 0.002388 0.001217 0.006009 0.003007 0.000038 0.007527 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545 0.003668 0.084812 0.002572 0.007017 0.002975 0.00**0038 0.003162 0.0038**50 0.00085 0.003434 0.001021 0.000116 0.001545 0.006004 0.000207 0.000010 0.000032 0.000348 0.000001 0.000011 0.000038 0.000008 0.000112 0.001153 0.000016 0 0.000000 0.002732 0.000038 0.000451 0.152543 0.008536 0.000128 0.088715 0.004326 0.019122 0.000015 0.000168 h 0.000000 0.002732 0.000060 0.000451 0.010770 0.010240 0.000128 0.002385 0.000139 0.003326 0.00015 0.000168 m 0.000000 0.005458 0.054138 0.000451 0.007050 0.022842 0.003189 0.002385 0.000139 0.003328 0.000020 0.000168 0 NUCCODO O COSBET C.011675 C.001611 C.014182 C.217112 C.000126 C.002385 C.000224 C.003326 C.000015 C.000168 d 0.000000 0.002732 0.00410 0.000410 0.006520 0.009538 0.000390 0.002385 0.000138 0.003328 0.00015 0.000168 1 0.000000 0.002732 0.003510 0.000451 0.007050 0.008538 0.000780 0.002385 0.000138 0.003328 0.000015 0.000140 a 0.000000 0.059630 0.050193 0.000529 0.007050 0.008129 0.000275 0.002305 0.000169 0.003326 0.000135 0.001385 c 0.0000000 0.002732 0.010180 0.011230 0.047050 0.010830 0.000120 0.002385 0.000139 0.003328 0.000015 0.000168 | 0.000000 0 002732 0.058738 0.000451 0.007050 0.013874 0.000128 0.002385 0 000286 0 099874 0.000060 0.000168 D.000000 D.002732 D.000010 D.000451 D.007050 D.008538 D.000126 D.002385 D 000138 D.003326 D 000015 D.000168 K 0.000000 0.002732 0.000010 0.000451 0.007050 0.009538 0.000128 0.002385 0.003138 0.003326 0.000015 0.000168 0.000000 0.004447 0.045011 0.000620 0.021867 0.019677 0.000128 0.002365 0.00138 0.003647 0.000015 0.000881 0.006871 0.000230 0.000011 0.000016 0.000388 0.000008 0.000013 0.000042 0.000007 0.000013 0.001281 0.000010 0.006004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000018 0.000010 0.00010 0.001153 0.000010 0.006004 0.000207 0.000010 0.000020 0.000348 0.000010 0.000020 0.000038 0.000010 0.000010 0.001153 0.000010 0.008004 0.000207 0.000010 0.000014 0.0000148 0.000008 0.000011 0.000008 0.000008 0.000012 0.001151 0.000009 0.033448 0.000207 0.000010 0.000014 0.000348 0.000008 0.000011 0.000038 0.000008 0.000012 0.001153 0.000008 0.006004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010 0 015058 0.000207 0.000010 0.000014 0.000348 0.000000 0.000011 0.000038 0.000006 0.000012 0.001153 0 000009 0.0068004 0.000207 0.000010 0.000014 0.000310 0.000010 0.000010 0.000038 0.000010 0.000090 0.001153 0.000010 0.008004 0.007280 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001151 0.000010 008004 0.000207 0.000010 0.000014 0.000348 0.000008 0.000011 0.000038 0.000008 0.000012 0.001805 0.000009

0.009143 0.002398 0.001217 0.006009 0.009485 0.000951 0.003162 0.003650 0.001962 0 125245 0.002201 0 002702 0 001545

# 0.000000 0.002732 0.048518 0.000592 0.010198 0.017854 0.000128 0.002385 0.000245 0.003326 0.000015 0.000607

0.005004 0.000207 0.000010 0.000014 0.000410 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0 000010

0.003668 0.002388 0.001217 0.006009 0.002875 0.000038 0.003162 0.003650 0.000885 0.003434 0.003060 0.000133 0.001545

0.006004 0 000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000018 0.000010 0.000010 0.001153 0 000010

v 0.0000000 0.002732 0.002320 0.000451 0.007050 0.008536 0.000128 0.002385 0.000139 0.003326 0.000015 0.000168

0.006004 0.000207 0.000010 0.000014 0.000348 0.000008 0.000011 0.000038 0.000006 0.000012 0.000923 0 000000

0.003668 0 002398 0.001217 0.006009 0.002975 0.000038 0.003182 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545

w 0.000000 0.002732 0.000640 0.000451 0.007050 0.009536 0.000128 0.002385 0.000139 0.003326 0.000015 0.000168

0.003139 0.002398 0.001217 0.019874 0.002875 0.000038 0.003162 0.003650 0.000885 0.003434 0.001021 0.000766 0.062837

× 0.000000 0 002732 0.070471 0.000451 0.007050 0.009538 0.000128 0.002385 0.000139 0.003326 0.000015 0 000168

0.006c04 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010

0.003668° 0.002398° 0.001814° 0.006009° 0.015807° 0.000038° 0.003162° 0.007804° 0.008070° 0.003434° 0.001021° 0.000133° 0.001545

Y 0.000Q00 0.017825 0.023452 0.000451 0.033778 0.021472 0.000126 0.002385 0.000139 0.002903 0.000015 0.000168

0.006004 0.000207 0.000010 0.000014 0.000348 0.000008 0.000011 0.000038 0.000006 0.000012 0.001153 0.000009

0.003688 0.002388 0.001217 0.006009 0.002875 0.000038 0.003182 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545

z 0.000000 0.002732 0.000010 0.000451 0.007050 0.009**536 0.000128** 0.002385 0.000139 0.003328 0.000015 0.000168

0.153084 0.000207 0.000166 0.000014 0.000348 0.000008 0.000011 0.000038 0.000006 0.00168 0.001153 0.000009

### v.iuəbra u.uu4355 0.000038 0.003162 0.003650 0.001198 0.003434 0.008482 0.000133 0.001545 0.003668 0.002398 0.001217 0.006009 0.002875 0.00003**6** 0.003162 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545 0.003668 0.002398 0.001217 0.006009 0.002975 0.000038 0.00**3162 0.**003650 0.000885 0.003434 0.001021 0.000133 0.001545 0.003668 0.002398 0.001217 0.007688 0.002975 0.000038 0.100020 0.007317 0.000885 0.003434 0.001021 0.000133 0.001545 0.003888 0.002398 0.001217 0.006009 0.022243 0.000038 0.003182 0.108541 0.000885 0.004822 0.001021 0.000133 0.001545 0.003668 0.002398 0.001217 0.006009 0.002975 0.000038 0.003162 0.003650 0.001280 0.003434 0.001021 0.000133 0.001545 p 0.000000 0.002732 0.003660 0.000451 0.007050 0.009538 0.000128 0.002385 0.000139 0.003326 0.000015 0.000168 q 0.000000 0.002732 0.000030 0.000451 0.007050 0.009**536** 0.000128 0.002385 0.000139 0.003326 0.000015 0.000168 s 0.000000 0.004833 0.054168 0.000669 0.007050 0.009538 0.000128 0.002385 0.000139 0.003326 0.000015 0.000168 r 0.000000 0.002732 0.051948 0.000451 0.012453 0.019381 0.000128 0.002385 0.000121 0.003326 0.000112 0.000194 ! 0.000000 0.002732 0.003210 0.0004\$1 0.0070\$0 0.009\$38 0.000128 0.00238\$ 0.000139 0.003326 0.000015 0.000168 0.006004 0.000207 0.000010 0.000014 0.000348 0.000094 0.000011 0.0000038 0.000005 0.000012 0.001153 0.000009 0.006004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000018 0.000010 0.000010 0.001153 0.000010 0.006095 0.000207 0.000010 0.000014 0.000658 0.000008 0.000011 0.000038 0.000005 0.00012 0.001153 0.000009 0.013972 0.000207 0.000010 0.000014 0.000348 0.000010 0.000208 0.000038 0.000006 0.000012 0.001153 0.000101





0.008929 0.002432 0.003572 0.000000 0.002883 0.000403 0.003014 0.002883 0.003135 0.003714 0.001128 0.001083 0.002818 0.017243 0.002189 0.010412 0.021573 0.002595 0.002751 0.006488 0.002595 0.002822 0.003342 0.001015 0.000972 0.002628 0.007227 0.002189 0.003215 0.07640**5** 0.002585 0.000383 0.000**2112** 0.002585 0.002822 0.003342 0.001015 0.005128 0.002828 0.002189 0.003215 0.056353 0.002585 0.000363 0.002712 0.004415 0.002822 0.003342 0.001015 0.000786 0.002828 0.001887 0.000008 0.000239 0.000187 0.000014 0.000446 0.0000018 0.000003 0.012062 0.000013 0.003868 0.002398 0.001217 0.006609 0.002975 0.000038 0.003162 0.003650 0.000685 0.003434 0.001021 0.000133 0.001545 0.008004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.0000138 0.000010 0.00010 0.001153 0.00010 0.003668 0.002398 0.001217 0.006009 0.002975 0.000038 0.003162 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545 0.003868 0.002398 0.001217 0.008009 0.002975 0.000038 0.003162 0.003550 0.000885 0.003434 0.001021 0.000133 0.001545 0.003888 0.002298 0.001217 0.006609 0.002975 0.000038 0.003162 0.003850 0.000885 0.003434 0.001021 0.00133 0.001545 0.003668 0.002368 0.001217 0.006009 0.002875 0.000018 0.003162 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545 0.000308 0.000010 0.000010 0.000133 0.001545 0.003888 0.002398 0.001217 0.006009 0.002975 0.000038 0.003162 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545 0.003568 0.002398 0.001217 0.006009 0.002875 0.000038 0.003162 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545 8 0.000000 0.074705 0.002488 0.008568 0.001828 0.005230 0.002250 0.001841 0.001948 0.007224 0.031753 0.003857 b 0.000000 0.002582 0.083845 0.002335 0.001828 0.005230 0.002250 0.001941 0.001948 0.003745 0.001753 0.003857 Sil 0.000000 0.002868 0.002784 0.002595 0.002029 0.005612 0.002500 0.002158 0.002162 0.004161 0.001847 0.004285 C 0,000000 0.004288 0.002488 0.075351 0.001828 0.004870 0.002382 0.001941 0.001848 0.003745 0.001753 0.003857 9 0.000000 0.002732 0.000010 0.000451 0.007050 0.009536 0.000128 0.002385 0.000139 0.003328 0.000015 0.000168 7 0.000000 0.002732 0.000010 0.000451 0.007050 0.008538 0.000128 0.002385 0.000139 0.003328 0.000015 0.000168 8 0.000000 0.002732 0.000010 0.000451 0.007050 0.008538 0.000128 0.002385 0.000139 0.003326 0.000015 0.000168 6 0.000000 0.002732 0.000010 0.000451 0.007050 0.008538 0.000128 0.002385 0.000138 0.003328 0.000015 0.000168 5 0.000000 0.002732 0.000010 0.000451 0.007050 0.008538 0.000126 0.002385 0.000139 0.003328 0.000015 0.000168 4 0.0000000 0.002732 0.000010 0.000451 0.007050 0.008538 0.000128 0.002385 0.000139 0.003328 0.000015 0.000168 3 0 000000 0.002732 0.000010 0.000451 0.007050 0.008538 0.000128 0.002385 0.000139 0.003328 0.000015 0.000168 0.002861 0.002208 0.000010 0.000188 0.000219 0.000016 0.000161 0.000020 0.000003 0.000008 0.002464 0.000015 0.002395 0.001987 0.000009 0.004028 0.000187 0.000014 0.000183 0.000018 0.000003 0.000007 0.057733 0.000013 0.002395 0.001987 0.000009 0.000169 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 O.008604 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000011 0.000010 0.008004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010 0.008004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010 0.0086004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.00010 0.001153 0 000010 0.006004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010 0.002385 0.001887 0.000009 D.000239 0.000187 0.006380 0

O

0 003668 0.002398 0.001217 0.006008 0.002975 0.000038 0 003162 0.003650 0 000865 0.003434 0 001021 0.000133 0 001545

0.003568 0.002398 0.001217 0.006009 0.002975 0.000038 0.003182 0.003650 0.000885 0.003434 0.001021 0.000133 0.001545

1 0.000000 0.002732 0.000010 0.000451 0.007050 0.009538 0.000128 0.002385 0.000138 0.003328 0.000015 0.000168

0 006004 0.000207 0.000010 0.000014 0.000346 0.000010 0.000010 0.000038 0 000010 0.000010 0.001153 0.000010

0.003668 0.002398 0.001217 0.006609 0.002875 0.000038 0.003162 0.003850 0.000885 0.003434 0.001021 0.000133 0.001545

0 808604 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010

0.000000 0.002732 0.000010 0.000451 0.007050 0.008638 0.000128 0.002345 0.000139 0.003328 0.000015 0.000168

0.006004 0.000207 0.000010 0.000014 0.000348 0.000010 0.000010 0.000038 0.000010 0.000010 0.001153 0.000010

0.007227 0.061876 0.003215 0.091861 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.065538 0.002189 0.003215 0.039628 0.002585 0.000363 0.002712 0.002595 0.002822 0.003342 0.007456 0.000972 0.002626 0,037275 0,018888 0.078088 0.054330 0.002595 0.000363 0.002895 0.007172 0.002822 0.003342 0.001015 0.000953 0.002626 0.011587 0.002189 0.003215 0.053302 0.002595 0.000363 0.006051 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.023270 0.002188 0.003843 0.078395 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.052357 0.002189 0.003215 0.094090 0.00258\$ 0.000383 0.002712 0.00358\$ 0.002822 0.003342 0.001015 0.000972 0.002626 0.007227 0.002189 0.003215 0.173974 0.002595 0.000363 0.008598 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.007227 0.002189 0.006172 0.086754 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.007227 0.002189 0.003215 0.073777 0.002595 0.000363 0.002712 0.003924 0.002822 0.003342 0.001015 0.000954 0.002626 0.016433 0.002189 0.003215 0.075385 0.060877 0.0**000859 0.**002712 0.002595 0.005572 0.003342 0.001015 0.000972 0.002628 0.007227 0.002189 0.003215 0.075843 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.007227 0.002054 0.005242 0.051873 0.016058 0.000355 0.002342 0.002585 0.002296 0.002785 0.001015 0.000945 0.002626 0,007015 0,002189 0,006537 0,054643 0,018788 0,000383 0,005336 0,002585 0 009289 0,003342 0,001204 0 000972 0,002826 m 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001941 0.001946 0.003745 0.001753 0.003857 K 0.0000000 0.002582 0.002488 0.002335 0.001826 0.005230 0.002250 0.001941 0.001946 0.023781 0.001753 0.147025 n 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001941 0.001948 0.003745 0.001753 0.003857 o 0,0000000 0,002582 0,002488 0,002335 0,001828 0,005230 0,005157 0,001941 0,001946 0,003745 0,001753 0,003857 D 0.000000 0.002124 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001848 0.003745 0.001753 0.003857 g 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.015069 0.001948 0.003745 0.001753 0.003857 h 0.000000 0.002582 0.002488 0.002335 0.001628 0.005230 0.002250 0.001841 0.077239 0.003745 0.001753 0.003857 0.000000 0.002582 0.002488 0.002335 0.001828 0.008819 0.002250 0.001941 0.001946 0.003745 0.071098 0.003857 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001846 0.003745 0.001753 0.003857 0.000000 0.002582 0.002488 0.002335 0.006498 0.127255 0.002250 0.001841 0.001846 0.003745 0.001753 0.003857 | 0,000000 0,004348 0,002488 0,002335 0,001828 0,009981 0,002250 0,001941 0,001946 0,107926 0,001753 0,003857 d 0.000000 0.002826 0.007048 0.002335 0.060609 **0.021489 0.002250 0.**002207 0.001946 0.003745 0.001753 0.00385 / 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.078570 0.001941 0.001946 0.003745 0.001753 0.003857 0.002451 0.001987 0.000038 0.000169 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.004880 0.000110 0.002395 0.001987 0.000009 0.000286 0.000197 0.000014 0.000428 0.000024 0.0000003 0.000007 0.002218 0.000013 0.002385 0.001887 0.000009 0.000169 0.000197 0.000014 0.000423 0.000018 0.000003 0.000007 0.002218 0.000013 0.002385 0.001987 0.000037 0.000169 0.000197 0.000014 0.000163 0.000324 0.000003 0.000007 0.001809 0.000105 0.002395 0.001987 0.000009 0.000169 0.001002 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 0.002385 0.001987 0.000011 0.000182 0.000197 0.000036 0.000163 0.000128 0.000003 0.000007 0.002218 0.000023 0.002218 0.000013 0.002395 0.001987 0.000009 0.000169 0.001008 0.000014 0.002449 0.000018 0.000003 0.000007 0.002218 0.000013 0.002395 0.001987 0.000009 0.000208 0.000197 0.000014 0.000478 0.000018 0 000003 0.000007 0.002218 0.000013 0.004247 0.001987 0.000009 0.000169 0.000187 0.000014 0.001049 0.000018 0.000003 0.000007 0.005543 0.000015 0.000000 0.000169 0.000187 0.000014 0.000183 0.000018 0.000003 0.000007 0.002218 0.000013 0.002395 0.001987 0.000009 0.000169 0.000197 0.000014 0.000183 0.000018 0.000003 0.000007 0.002218 0.000013 0.002218 0.000031 0.000014 0.000869 0.000123 0.000003 0.000007 0.000000 0.000169 0.000409 0.000014 0.000163 0.000018 0.000003 0.000135 0.002385 0.001887 0.000009 0.000561 0.000197 0.002395 0.001987

# FIG. 13a-

### FIG. 13a-5

0.009525 0.002189 0.003215 0.080981 0.002585 0.001555 0.002712 0.002585 0.002822 0.005453 0.001015 0.000972 0.002626 0.007227 0.002169 0.003215 0.063587 0.002595 0.000709 0.002712 0.002595 0.006657 0.121734 0.001015 0.000972 0.002626 0.019961 0.002189 0.003215 0.096380 0.002595 0.000363 0.006608 0.002595 0.002822 0.003342 0.029164 0.00972 0.02626 0.007227 0.002189 0.003215 0.108616 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.029694 0.002626 0.007227 0.002188 0.004713 0.064201 0.002595 0.000383 0.002712 0.002595 0.004575 0.003342 0.001015 0.000972 0.102163 0.007227 0.002189 0.004540 0.080880 0.002595 0.000383 0.002712 0.002595 0.002822 0.003342 0.001015 0.000872 0.002626 0.007227 0.002189 0.003215 0.000010 0.002595 0.000383 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0 007227 0 002189 0 003215 0 000010 0 002595 0 000363 0 002712 0 002595 0 002822 0 003342 0 001015 0 000972 0 002626 0.007227 0.002168 0.003215 0.067026 0.002762 0.008443 0.002712 0.007697 0.076492 0.003342 0.001015 0.000972 0 002626 0.002189 0.003215 0.000010 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.02626 0.007227 0.002189 0.003215 0.100030 0.002595 0.000383 0.058697 0.002585 0.002822 0.003342 0.001015 0.000972 0 002626 0.007227 0.002189 0.003215 0.089847 0.002595 0.000363 0.002712 0.069028 0.002822 0.003342 0.001015 0.000972 0.002626 0.007227 0.002189 0.003215 0.000010 0.002595 0.**000363 0.002712 0.002**595 0.002822 0.003342 0.001015 0.000972 0.002828 w 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001846 0.003745 0.001753 0.003857 z 0.000000 0.002582 0.002488 0.005818 0.001828 0.009355 0.002250 0.001841 0.001846 0.003745 0.001753 0.003857 U 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001848 0.003745 0.001753 0.003857 × 0.000000 0.002582 0.002488 0.002335 0.001628 0.005230 0.002250 0.001941 0.001946 0.003745 0.001753 0.003857 0 0.000000 0.002582 0.002488 0.002335 0.001826 0.005230 0.002250 0.001841 0.001846 0.003745 0.001753 0.003857 v 0.0000000 0.003290 0.006485 0.002335 0.002435 0.006542 0.002250 0.001941 0.001946 0.003745 0.001753 0.003857 y 0.0000000 0.002871 0.002488 0.002335 0.001828 0.005230 0.002250 0.001941 0.001946 0.003745 0.001753 0.003857 2 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001941 0.001848 0.003745 0.001753 0.003857 S 0.0000000 0.002582 0.002488 0.002335 0.001626 0.005230 0.004162 0.001941 0.001946 0.003745 0.001753 0.003857 1 0.0000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001846 0.003745 0.001753 0.00385/ 1 0.000000 0.002582 0.002488 0.003737 0.001828 0.005230 0.002250 0.001941 0.001946 0.003745 0.001753 0.003857 r 0.0000000 0.002562 0.002488 0.002335 0.001828 0.005230 0.002187 0.001941 0.001948 0.003745 0.001753 0.003857 0.002395 0.001987 0.000009 0.000378 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 0.002395 0.001987 0.000009 0.000169 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.004683 0.000112 0.002395 0.001987 0.000008 0.000300 0.000183 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000015 0.002395 0.001987 0.000009 0.000169 0.000197 0.000014 0.000163 0.000018 0.000003 0.000015 0.002218 0.000013 0.083135 0.001987 0.000009 0.000169 0.000197 0.000421 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 0.002395 0.079735 0.000009 0.000169 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 0.002395 0.001987 0.000147 0.000147 0.004914 0.000014 0.000147 0.000016 0.000003 0.000007 0.002218 0.000013 0.002395 0.001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000018 0.000010 0.000010 0.002218 0.000013 0.002395 0.001987 0.000010 0.000169 0.000187 0.000014 0.000163 0.000018 0.000010 0.000010 0.002218 0.000013 0,001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000018 0.000010 0.000010 0.000013 0.002395 0.001987 0.000009 0.000200 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 0.002395 0.001987 0.000009 0.000169 0.000197 0.000014 0.000163 0.000018 0.000003 0.000007 0.002218 0.000013 0.001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000118 0.000011

n ponnon n 002582 n 002488 n 002335 n 001828 n 005230 n 008250 n 001941 n 001946 n 003745 n 001753 n 003857

## FIG. 13a-6

0.007227 0.002189 0.003215 0.000010 0.002595 0.000363 0.002712 0.002595 0 002822 0.003342 0.001015 0.000972 0 002626 0.002189 0.003215 0.000010 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 ).007227 0.002189 0.003215 0.000010 0.002595 0.000363 0.002712 0.002595 0.002872 0.003342 0.001015 0.000972 0.002626 0.002189 0.003215 0.000010 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0 002626 007227 0.002189 0.003215 0.000010 0.002595 0.000383 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 0.007227 0.002189 0.003215 0.000010 0.002595 0.000363 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 .007227 0.002189 0.003215 0.000010 0.002595 0.000383 0.002712 0.002595 0.002822 0.003342 0.001015 0.000972 0.002626 9 0.0000000 0.002582 0.002488 0.00233**5 0.**001628 0.005230 0.005250 0.001841 0.001846 0.003745 0.001753 0.003857 8 0,0000000 0,002582 0,002488 0,002335 0,001828 0,005230 0,002250 0,001941 0,001948 0,003745 0,001753 0,003857 4 0,0000000 0,002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001941 0.001948 0.003745 0.001753 0.003857 8 0.000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001948 0.003745 0.001753 0.003857 7 0,0000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001941 0.001846 0.003745 0.001753 0.003857 5 0,000000 0.002582 0.002488 0.002335 0.001828 0.005230 0.002250 0.001841 0.001848 0.003745 0.001753 0.003857 0.002395 0.001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000018 0.000010 0.000010 0.002218 0.000013 0.002395 0.001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000018 0.000010 0.000010 0.002218 0.000013 0 002395 0 001987 0 000010 0 000169 0 000197 0 000014 0 000183 0 000018 0 000010 0 000010 0 002218 0 000013 D.002395 D.001987 D.000010 D.000169 D.000197 D.000014 D.000163 D.000018 D.000010 D.000010 D.002218 D.000013 002395 0.001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000018 0.000010 0.000010 0.002218 0.000013 0,002395 0,001987 0,000010 0,000169 0,000197 0,000014 0,000163 0,000018 0,000010 0,000010 0,002218 0 000013 .002395 0.001987 0.000010 0.000169 0.000197 0.000014 0.000163 0.000018 0.000010 0.000011 0.002218 0 007227

0.004413 0.002729 0.003775 0.005913 0.003003 0.000805 0.008048 0.000000 0.003110 0.003297 0.000422 0.002795 0.005113 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.056565 0.002799 0.002868 0.000380 0.002515 0.004602 0.003972 0.002456 0.003397 0.005322 0.003307 0.000725 0.005443 0.084913 0.002799 0.002862 0.003853 0.002515 0.004602 0.003972 0.002456 0.003397 0.005322 0.005372 0.000725 0.005443 0.071393 0.002799 0.002968 0.000380 0.002515 0.006283 0.002456 0.002908 0.005322 0.006345 0.000725 0.005443 0.076857 0.006233 0.002484 0.001951 0.002515 0.007847 a 0.000000 0.065120 0.002516 0.002857 0.002264 0.025738 0.004722 0.002741 0.002428 0.004254 0.060159 0.003017 D 0.000000 0.005428 0.058351 0.002857 0.005043 0.008266 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 Sil 0.000000 0.006029 0.002795 0.003175 0.002516 0.008698 0.005247 0.003046 0.002695 0.004727 0.000204 0.003352 c 0.000000 0.005426 0.002516 0.098547 0.002888 0.007827 0.006706 0.002741 0.002426 0.004254 0.000183 0.003017 d 0.000000 0.005428 0.010746 0.002857 0.053319 0.012165 0.004740 0.004220 0.002428 0.004254 0.000183 0.003017 0.002960 0.000479 0.000006 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.003474 0.000141 0 003289 0 000532 0 000007 0 000347 0 000310 0 000277 0 000213 0 000028 0 000106 0 000736 0 000749 0 000157 0.000279 0.000249 0.000191 0.000025 0.000296 0.000884 0.000983 0.000141 0.002960 0.000479 0.000006 0.000312 0.000279 0.005554 0.000181 0.000025 0.000097 0.005540 0.000674 0.00014 0 000479 0 000006 0 000312 0 000279 0 000249 0 000191 0 000025 0 000097 0 000664 0 001304 0.002960

0.003972 0.003297 0.102443 0.005322 0.002703 0.000725 0.005443 0.076185 0.002799 0.002968 0.000380 0.002515 0.004189 0.003473 0.088648 0.011733 0.005322 0.002703 0.000725 0.005443 0.079807 0.002799 0.002968 0.000380 0.002515 0.006943 0.003972 0.002456 0.003397 0.160171 0.002703 0.000725 0.006187 0.042027 0.002799 0.002968 0.001917 0.002515 0.004602 0.003972 0.602456 0.003397 0.005322 0.078B74 0.000B58 0.005443 0.078238 0.002611 0.002868 0.000380 0.002515 0.007483 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.000010 0.002799 0.002968 0.000380 0.002515 0.004602 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.070194 0.002799 0.002968 0.00380 0.002515 0.020309 0 104000 0 U02456 0 003397 0 009804 0 002703 0 000725 0 005443 0 067592 0 002799 0 002968 0 000380 0 002515 0 004602 003872 0.002458 0.003397 0.005322 0.002703 **0.000725 0.005443 0.000**230 0.002789 0.002868 0.00380 0.002515 0.004802 0.003972 0.002456 0.003397 0.005322 0.00270**3 0.000725 0.005443 0.05**2080 0.002799 0.002968 0.000380 0.002515 0.004602 Q.003972 Q.002458 Q.003387 Q.005322 Q.002703 Q.000725 Q.005443 Q.075328 Q.003735 Q.002968 Q.00038Q Q.U02515 Q.022223 0,003972 0 002456 0 007733 0.005322 0.002703 0.000725 0.005443 0.071077 0.004616 0.002968 0.000380 0 002515 0 032483 .003972 0.002456 0.003397 0.005322 0.002703 0.000125 0.005443 0.067989 0.002799 0.002868 0.002268 0.002515 0.004602 .031731 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.060360 0.002789 0.002868 0.000380 0.002515 0.004602 m 0.000000 0.005167 0.002518 0.002319 0.002284 0.007448 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 n 0.000000 0.010056 0.002516 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.004680 0.000183 0.003017 O D.000000 D.009889 D.002518 D.002857 D.002264 D.007827 D.004722 D.002741 D.002428 D.004254 D.000183 D.003017 p 0.000000 0.005426 0.002516 0.002857 0.003780 0.017728 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 g 0.000000 0.005428 0.002516 0.002857 0.002284 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 k 0.000000 0.005426 0.002516 0.003044 0.002264 0.018565 0.004722 0.002741 0.002426 0.004254 0.000177 0.112720 11 0 000000 0.005428 0.002516 0.004808 0.002264 0.007827 0.019548 0 002305 0.089693 0.004254 0.000183 0 003017 | 0 000000 0.005426 0.002516 0.002857 0.002264 0.007827 0.004722 0.002741 0 002426 0.017068 0.000183 0 00301*1* g g.gobboog 0.go5428 0.gb2518 0.bb2857 0.gb2284 0.gb7723 0.gb4722 0.tb1635 0.gb2426 0.gb4254 0.gbb183 0.db3017 | 0.000000 0.018361 0.002516 0.002857 0.002264 0.008470 0.004722 0.002741 0.002426 0.099236 0.000183 0.003017 0.000000 0.005426 0.002516 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 e 0.000000 0.005426 0.005288 0.002857 0.008698 0.118273 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 0.000000 0.009870 0.002516 0.002857 0.002264 0.007827 0.147465 0.003448 0.003455 0.004254 0.000283 0.003017 0.003943 0.000479 0.000006 0.000574 0.000279 0.000249 0.000181 0.000025 0.000097 0.000864 0.000674 0.000141 0.002960 0.000479 0.000008 0.000282 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.000674 0.000141 0.002960 0.000479 0.000006 0.000312 0.000279 0.000249 0.000181 0.000025 0.000097 0.000664 0.002750 0.000141 0.002960 0.000479 0.000006 0.000343 0.000279 0.000249 0.000181 0.000069 0.000097 0.000664 0.000674 0.000141 0.002960 0.0000479 0.000010 0.000312 0.000279 0.000248 0.000191 0.000025 0.000097 0.000664 0.002260 0.001319 0.002960 0.000479 0.000006 0.000312 0.000279 0.000249 0.000191 0.000051 0.000097 0.000664 0.000674 0.000141 0,002960 0,000479 0,000006 0,000312 0.000279 0,000249 0,000191 0.000025 0,000097 0,000664 0,000674 0 000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.000674 0.000141 0.002960 0.000479 0.0000006 0.000312 0.000279 0.001020 0.000218 0.000025 0.000383 0.001033 0.009554 0.000141 D DD2960 0 000479 0.000031 0.000312 0.000279 0.000249 0.000101 0.000025 0.000097 0.000664 0.000820 0.000141 0.000009 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.000674 0.000141 0,000479 0.000006 0.0000312 0.000424 0.000248 0.002755 0.000025 0.000097 0.000664 0.000674 0.000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000864 0.000874

### FIG. 13a-8

0.003972 0.002456 0.003397 0.005322 0.002703 0.023420 0.033831 0.057410 0.002799 0.013188 0.00502 0.002515 0.028274 0.003972 0.002458 0.003397 0.005322 0.002703 0.000725 0.005443 0.010030 0.002799 0.002968 0.00380 0.002515 0.004602 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.000010 0.002709 0.002968 0.000380 0.002515 0.004602 X 0.000000 0.005428 0.002518 0.002857 0.002284 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.000010 0.002799 0.002968 0.000380 0.002515 0.004602 z 0.000000 0.005426 0.002516 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 0.003972 0.002458 0.003397 0.005322 0.002703 0.000725 0.005443 0.000500 0.002799 0.002968 0.000380 0.002515 0.004602 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.000010 0.002799 0.002868 0.000380 0.002515 0.004802 0.007294 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.072006 0.002799 0.002968 0.000380 0.002515 0.004602 v 0.000000 0.005426 0.021467 0.002857 0.012109 0.041350 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.010832 0.096582 0.002799 0.002968 0.003530 0.002515 0.004602 0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.024589 0.053024 0.002799 0.002912 0.000380 0.100518 0.021817 0.003972 0.002456 0.003397 0.005322 0.006851 0.000826 0.005443 0.078820 0.084105 0.002968 0.000380 0.002515 0.003949 0.003972 0.002456 0.003397 0.005322 0.002703 0.003407 0.005443 0.068743 0.002799 0.088425 0.000380 0.002515 0.004602 .003972 0.002456 0.003397 0.007331 0.002703 0.000725 0.116471 0.066302 0.002799 0.002968 0.000380 0.002515 0.003730 0.003972 0.002456 0.003397 0.004279 0.002703 0.000725 0.005443 0.170850 0.002799 0.002968 0.000380 0.002515 0.004602 0 0.000000 0.005428 0.002518 0.002857 0.002284 0.006238 0.004722 0.002741 0.002428 0.014144 0.008645 0.003017 2 0.000000 0.005428 0.002518 0.002857 0.002284 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 3 0.000000 0.005426 0.002516 0.002857 0.002264 0.007627 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 1 0.000000 0.050880 0.002518 0.002857 0.002264 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 y 0.000000 0.009881 0.002516 0.002857 0.002264 0.008719 0.004722 0.002741 0.002426 0.007105 0.000183 0.003017 W 0.000000 0.005426 0.002516 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.008404 0.000183 0.003017 U 0.000000 0.005426 0.002518 0.002857 0.002264 0.007205 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 \$ 0.000000 0.004561 0.002518 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 1 0.0000000 0.005426 0.002518 0.002857 0.002284 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 r 0.0000000 0.005428 0.002516 0.002354 0.002264 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 0.002960 0.000479 0.000010 0.000312 0.000278 0.000248 0.000191 0.000025 0.000087 0.000884 0.000874 0.000141 0.096304 0.000479 0.000006 0.000312 0.000288 0.000249 0.000191 0.000025 0.000128 0.000564 0.000574 0.000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000249 0.000181 0.000025 0.000087 0.000664 0.000674 0.000141 0.002960 0.000479 0.000010 0.010540 0.000279 0.000249 0.000191 0.000080 0.000290 0.000584 0.000574 0.000141 0.000010 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000484 0.000874 0.000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000248 0.000181 0.000025 0.000097 0.000664 0.000674 0.000141 0.002960 0.017989 0.000007 0.000353 0.007338 0.001085 0.004502 0.000339 0.002210 0.002224 0.001871 0.004021 0.002960 0.000479 0.000006 0.000312 0.001603 0.000248 0.000181 0.000025 0.000097 0.000664 0.000549 0.000141 0.009312 0.0000888 0.000006 0.0000312 0.0000279 0.0000323 0.0000181 0.000025 0.000097 0.0000584 0.000674 0.000141 0.002960 0.000479 0.000039 0.000312 0.001045 0.000505 0.000181 0.000025 0.000097 0.000664 0.001123 0.000141 0.002960 0.000479 0.000006 0.000312 0.000279 0.000249 0.000181 0.000025 0.000208 0.000664 0.000674 0.000141 0.002960 0.000479 0.000006 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.000674 0.000152 .002960 0.000479 0.000006 0.000312 0.000279 0.000485 0.000191 0.000033 0.000097 0.000664 0.000674 0.000141

# FIG. 13a-9

0.003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.000010 0.002799 0.002968 0.000380 0.002515 0.004602 0.003872 0.002456 0.003387 0.005322 0.002703 0.000725 0.005443 0.000010 0.002799 0.002968 0.000380 0.002515 0.004602 .003972 0.002456 0.003397 0.005322 0.002703 0.000725 0.005443 0.000010 0.002799 0.002968 0.000380 0.002515 0.004602 6 0.000000 0.005428 0.002518 0.002857 0.002284 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 7 0.000000 0.005428 0.002516 0.002857 0.002284 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 8 0.000000 0.005428 0.002518 0.002857 0.002284 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 9 0.000000 0.005428 0.002518 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 4 0.000000 0.005426 0.002516 0.002857 0.002264 0.007827 0.004722 0.002741 0.002426 0.004254 0.000183 0.003017 5 0.000000 0.005428 0.002516 0.002857 0.002284 0.007827 0.004722 0.002741 0.002428 0.004254 0.000183 0.003017 0.002960 0.000478 0.000010 0.000312 0.000279 0.000249 0.000181 0.000025 0.000097 0.000664 0.000674 0.000141 0.002960 0.000478 0.000010 0.000312 0.000279 0.000248 0.000191 0.000025 0.000097 0.000664 0.000674 0.000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000248 0.000191 0.000280 0.000280 0.015880 0.000674 0.000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.000874 0.000141 0.002960 0.000479 0.000010 0.000312 0.000279 0.000248 0.000191 0.000025 0.000097 0.000664 0.000674 0.000141 0.000479 0.000010 0.000312 0.000279 0.000249 0.000191 0.000025 0.000097 0.000664 0.000674 0.000141

### FIG. 13b

```
n 0 107703
o 0 147365
p 0 104548
q 0 000220
r 0 133977
s 0 157915
                                                                                                                                                                                                                                       u 0 139083
v 0.103158
w 0 124114
x 0 000010
                                                                                               g 0 114896
h 0 114976
                                                                                                                   0 147679
0 000010
0 0116405
                                                                                                                                                           m 0.107330
                                                                                                                                                                                                                                                                                                     0.0144084
0.05210
0.000010
0.000010
0.000010
0.000010
                                                                                                                                                 1 0 113312
                                                                                                                                                                                                                             0.097456
                                                                                      0 126491
                                                                                                                                                                                9 0.000010
r 0.112488
s 0.132361
                                                                                                                                           m 0 128615
                                                                                                  0.161874 0.114188
                                                                                                                       0.167875
                                                                                                                                                    n 0.169739
                                                                                                                                                                       p 0.147606
                                                                                                                                                                                                                                                                   0 237213
0 000010
0 000010
                                                                                                                                                  n 0.080780
o 0.177360
p 0.004340
                                                                                                                                                                                      q 0.000010
r 0.182459
s 0.183513
t 0.004810
                                                                                                                                                                                                                                              ₩ 0.001350
                                                                                                                                         IN 0.172648
                                      c 0.032190
d 0.018230
e 0.224930
f 0.004360
g 0.287205
h 0.042840
                                                                                                                                                                                                                             u 0.191891
                                                                                                                     k 0.012310
                                                                                                                               0.199107
\boldsymbol{\omega}
```

Deletion

### EP 0 762 385 A2

```
n = 1
        Context=Silence
 Recognized=B
 Pe: →3 .655987
                                 <sup>P</sup>B 0.655987
                                 D,
             04985
       → D
                                      0.011988
             011813
                                 E
       → }:
                                       0.011813
                                 Ε.
 In:
         F 0.010596
                                      0.010596
 De:
            0.072822
                                      0 072822
 РВ
      0.655987
 n = 2
        Context=8
 Recognized=0
Pe: -B 0.023924
                                ав
                                       0.015694
      →0 0.618126
                                <sup>2</sup>BO
                                       0.405482
     → W 0.016075
                                <sup>P</sup>BW
                                       0.010545
ไทะ
                                88<sup>1</sup>
     →B 0.083845
                                       0.055001
     →0 0.076405
                                130
                                       0.050121
De:
                                оВ
            0.146337
                                       0.095995
PBO
       0.405482
n=3 Context=0
Recognized=S
                               BOA
Pe:
     - A
          0.011723
                                        0.004753
                               "eoc
     → 0 0.041892
                                        0.016986
                               PBOS
     → S
          0.539338
                                        0.218691
In:
                               1 BOO
     → 0
          0.160171
                                        0.064946
     → S
           0.042027
                               BOS
                                        0.017041
De:
                               <sup>D</sup>BO
           0.147365
                                        0.059754
```

### FIG. 14

DB 0.095995 n=3 Context=B Recognized=S

Pe: →B 0.023924

→S 0.618126

De: 0.016075

BB 0.001505

PBS 0.062869 invalid

<sup>P</sup>B 0.009121

D 0.072822 n=2 Context=Silence Recognized=O

Pe: -0 0.873477

<sup>P</sup>O 0.063608 0 0.006324

De: 0.086846

FIG. 14a

### EP 0 762 385 A2

0.63608 n=3Context - 0 Recognized=S <sup>P</sup>CA Pe: - A 0.011723 000746 °00 -- O 0.041892 002665 F OS → S 0.539338 .034306 100 In: **→** 0 0.160171 .010188 los S 0.042027 .002673 Oa 0.147365 De: .009374 <sup>1</sup>BB 0.055001 n = 2 Context=B Recognized=O ° BBB Pe. →B 0.023924 invalid <sup>P</sup>BBO **→** 0 0.618126 0.033998 F BBW - W 0.016075 BBB In. В 0.083845 0.004612 0 0.076405 OBB<sup>1</sup> 0.004202

PBO 0.058121 n=2 Context=0 Recognized=0

> Pe: O 0.577351 PBOO 0.028937 In: O 0.173974 IBOO 0.008720

> > FIG. 14b

"800 n=3 Reco		18937 ext=0 :S			
Pe:	A O S O S	0.011723 0.041892 0.539338 0.160171 0.042027		PBOOA PBOOO PBOOS 1BOOO 1BOOS	0.000339 0.001212 0.015607 0.004635 0.001216
De:		0.147365		,,BOO	0.004264
°BB	0.01	5694			
n=3	Cont	text=0			
Reco	gnized	=S			
Pe	e: A	0.011723		<sup>≀,</sup> 88A	invalid
	0	0.041892		"BDA	••
	S	0.539338		BBS	
In	: O	0.160171		<sup>I</sup> BBO	) t
	S	0.042027	• •	BBS	**
De	<b>3</b> :	0.147365		<sup>0</sup> 888	0.002313

FIG. 14c

PD n=2 Reco	0.0119 Conti gnized=	ext=D		
Pe:		0.017020 0.027756 0.504343	<sup>r</sup> DD <sup>p</sup> DE <sup>p</sup> DO	0.000204 0.000333 0.006046
In:	→ 0 → P → Y	0.017458 0.012972	° DP ' DY	0.000209 0.000156
	→ D → E → O → P	0.060609 0.021489 0.051673 0.016058	DE DE DP	0.000727 0.000258 0.000619 0.000193
De:		0.159377	D	0.001911

FIG. 14d

### EP 0 762 385 A2

E (	0.0118	373		
n=2	Cont	ex:=F		
Recogn	ized=	:C)		
Pe·	Ε	0 036376	PFE	
	-	0.011255	°EI	
	Ņ	0.014544	PEN	
	0	0 513147	C.P	0.006062
	D	0.024011	<sup>2</sup> EP	
	Ŧ	0.010950	PET	
la:	5	0.127255	FF	
	O	0.054643	, EO	
	þ	0.018788	<sup>I</sup> EP	•
De:		0.130249	<sup>0</sup> E	0.001539
		ext=E		
Pe:	Α	0.011145	PEA	
•	В	0.200916	PEB	0.002129
	0	0.017673	r ED	
	Ε	0.097556	P <sub>EP</sub>	
	Ρ	0.048040	^	
131	S.	0.011736	PET	
T_	T	0.022734	E B	
I∩:	В	0.011675	ED I	
	D E	0.014182	1 EE	•
	P	0.217112 0.036343	I <sub>EP</sub>	
			IET	
0-	T	0.018599	) E	
De:		0.224930	C	

FIG. 14e

```
ЭВ
<sup>i</sup>BOO
<sup>13</sup>EO
PDO
       0.0060461
       Context=0
n=3
Recognized=S
                                     PDOA
                                              0.000071
             0.011723
Pe:
      - A
                                     000
      → O 0.041892
                                              0.000253
                                     PDOS
                                              0.003261
             0.539338
      --- S
                                      ^{\rm I}DOO
                                              0.000968
             0.160171
      → 0
In:
                                     IDOS
                                              0.000254
             0.042027
      --- S⋅
                                     OO <sup>0</sup>
             0.147365
                                              0:000891
De:
```

FIG. 14f

operation	prefix	confusion value
P I D P I D P I D I D I I D I I I I I I	BOS BOO BO OS BOSS OO O BOA BOOO DOS	0.218691 0.064946 0.059754 0.034306 0.015607 0.010188 0.009374 0.004753 0.004635 0.003261 0.002673
D D	OO BBB	0.002665 0.002323

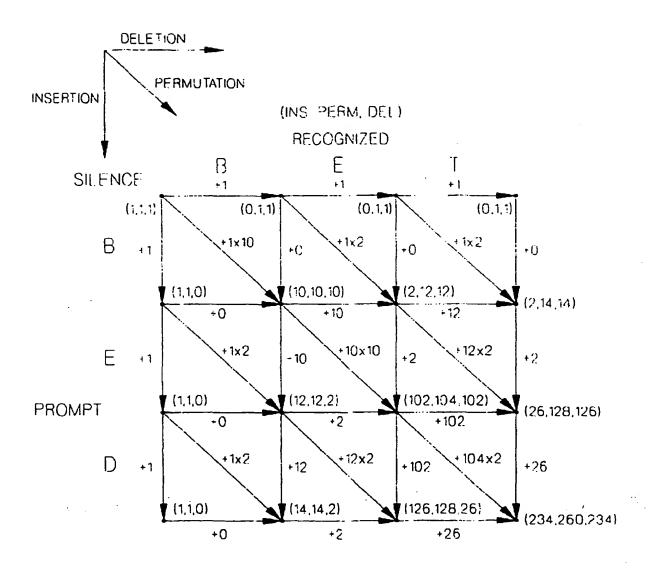


FIG. 16

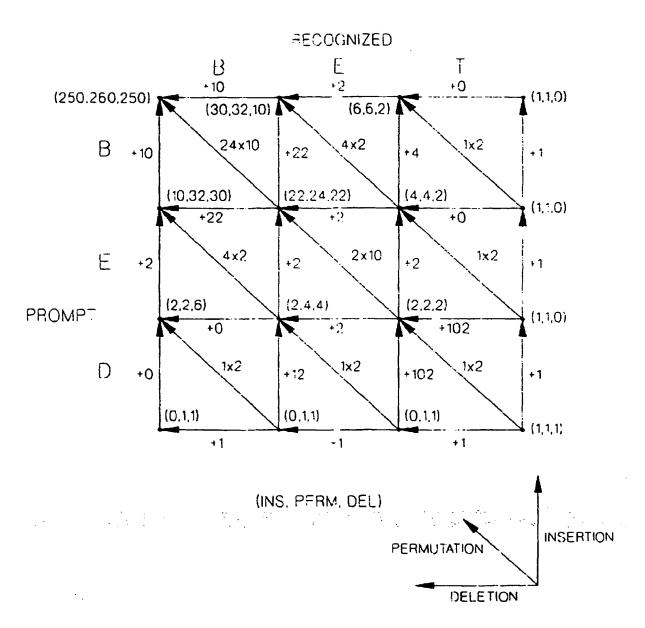
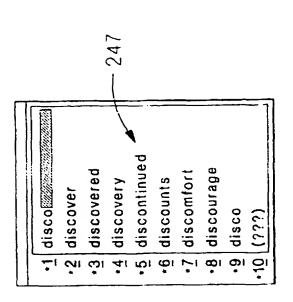


FIG. 16a



12 Windmili Road Boston, MA 32130 Dear Mr. and Mrs. Van Garde:

Thank you tor inviting us to Man of La Maricha! We thought your son played the role of Don Quixote fabulously! We particularly enjoyed his fiscale

### FIG. 17

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### Europäisches Patentamt European Patent Office Office européen des brevets

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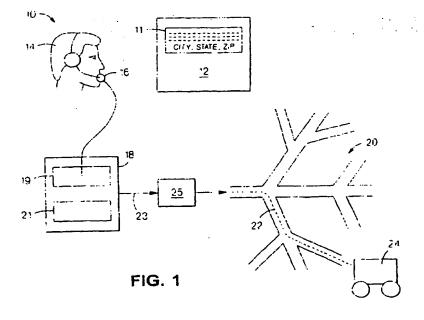
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 (74) Representative: Deans, Michael John Percy Lloyd Wise, Tregear & Co., Commonwealth House,
 1-19 New Oxford Street London WC1A 1LW (GB)

### (54) Speech recognition

(57) A method of speech recognition includes recognizing a first utterance, recognizing a second utterance having information that is related to the first utterance, and determining the most probable first and second utterances based on stored information about valid relationships between possible first and second utter-

ances. The recognized first utterance may be recognized continuously and the recognized second utterance may be recognized discretely. The determination of the most probable utterances may include creating a list of possible utterances that could be confused with a recognized utterance and rerecognition of a list of possible utterances against an utterance





### **EUROPEAN SEARCH REPORT**

EP 96 39 6255

Category	Citation of document with in of relevant passa	dication, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (INLCI.6)
X,P	WO 96 13030 A (BRIT	ISH TELECOMM ;ATTWATER ITTAKER STEVEN JOHN) page 11, line 11;		G10L5/06
X	RECTIFICATION* COMPUTERS IN INDUST vol. 20, no. 1, 1 J pages 63-73, XP0002 * paragraph 3.1 *	SS INTERPRETATION AND RY, uly 1992,	31	
A	EP 0 645 757 A (XER * page 7, line 49 -		1	
A	EP 0 655 732 A (AT * claim 1 *	& T CORP)	1	TECHNICAL FIELDS
A		ES USING A LAYERED PLA ISAMBIGUATION OF SPEEC TES BY FOCUSING ON IN JAPAN, il 1994, 76966	·· 1	SEARCHED (Int.CI.6) G10L G06K
			6	
	The present search report has	The state of the s		
	Place of search	Date of completion of the search	<del>l.                                 </del>	Examiner ·
	THE HAGUE	3 March 1998	WAN	IZEELE, R
X:par Y:par doc A:tso	CATEGORY OF CITED DOCUMENTS titularly relevant if taken alone titularly relevant if combined with anot ument of the same category finalogical background newtiten disclosure	T : theory or princi E : earlier patent d after the filing d her D : document case L : document case	ple underlying the incument, but publicate in the application for other reasons	rivention shed on, or



Application Number

EP 96 30 6255

CLAIMS INCURRING FEES
The present European patent application comprised at the time of filing more than ten claims.
Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.
LACK OF UNITY OF INVENTION
The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:
see sheet B
All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:  1-28, 31



### LACK OF UNITY OF INVENTION SHEET B

Application Number EP 96 30 6255

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-28,31

Recognizing a first utterance and a second utterance, related to the first utterance; recognizing ambiguous inputs.

2. Claims: 29,30

Generating a choice list from a continuously recognized utterance.

3. Claims: 32,33

Training a speech recognizer.

4. Claims: 34-36

Displaying word choices during speech recognition.

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